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procedures to expedite the review process or for any other good cause which may be consistent with applicable law. The Assistant Secretary finds that the Puerto Rico plan supplement described above is consistent with commitments contained in the approved plan, which were previously made available for public comment. Accordingly, it is found that further public comment is unnecessary.

#### Decision

After careful consideration, the Puerto Rico plan supplement described above is hereby approved under Subpart B of Part 1953. This decision incorporates the requirements of the Act and implementing regulations applicable to State plans generally. In addition, Subpart FF of 29 CFR Part 1953 is hereby amended to reflect this approved plan change. Accordingly, a new § 1952.384 is added to Subpart FF to read as follows:

#### § 1952.384 Completed developmental steps.

In accordance with the requirements of § 1952.10, Puerto Rico's safety and health posters for private and public employees were approved by the Assistant Secretary, on July 2, 1979.

Signed at Washington, D.C., this 2nd day of July 1979.

(Sec. 18, Pub. L. 91-596, 84 Stat. 1608/29 U.S.C. 657)

Eula Bingham,

Assistant Secretary of Labor.

[FR Doc. 79-21967 Filed 7-16-79; 8:45 am]

BILLING CODE 4510-26-M

proposed revisions affect the following rules and regulations of the Pennsylvania Department of Environmental Resources (DER): Chapter 121 (relating to general provisions); Chapter 123 (relating to standards for contaminants); Chapter 127 (relating to construction, modification, reactivation, and operation of sources); Chapter 129 (relating to standards for sources) and Chapter 139 (relating to sampling and testing).

**EFFECTIVE DATE:** August 18, 1979.

**ADDRESSES:** Copies of the revision and accompanying support material are available for public inspection during normal business hours at the following locations:

U.S. Environmental Protection Agency, Region III, Air Programs Branch, Curtis Building, 10th Floor, Sixth & Walnut Streets, Philadelphia, Pennsylvania 19106, Attn: Ms. Patricia Sheridan.

Pennsylvania Department of Environmental Resources, Bureau of Air Quality and Noise Control, P.O. Box 2063, Harrisburg, Pennsylvania 17120, Attn: Mr. James K. Hambright.

Public Information Reference Unit, Room 2922, EPA Library, U.S. Environmental Protection Agency, 401 M Street SW., Washington, D.C. 20460.

**FOR FURTHER INFORMATION CONTACT:** Mr. Mark Garrison (3AH13), Air Programs Branch, U.S. Environmental Protection Agency, Curtis Building, Tenth Floor, Sixth & Walnut Streets, Philadelphia, Pennsylvania 19106; phone 215/597-2745.

#### SUPPLEMENTARY INFORMATION:

##### I. Background

On June 30, 1978, DER submitted to the Regional Administrator, Region III, amendments to Pennsylvania's Air Resources Regulations designed to regulate particulate emissions from coke ovens, and requested that they be reviewed and processed as a revision of Pennsylvania's State Implementation Plan (SIP).

Appropriate public hearings on the proposed amendments were held on April 5, 1977 in Norristown, Pennsylvania; on April 7, 1977 in Pittsburgh, Pennsylvania, and on April 12, 1977 in Harrisburg, Pennsylvania in accordance with 40 CFR 51.4.

Prior to these amendments, DER had no regulations pertaining uniquely to the control of particulate emissions from coke oven batteries. Control of particulate emissions from coke batteries was based on the application of regulations containing general limitations on visible emissions from

any source and a general mass loading limitation that was applied to coke battery waste heat stacks. The new regulations contain emission limitations for individual coke battery operations that are designed specifically for those operations. Accordingly, the new regulations are intended to be more easily administered and enforced than the current federally-approved SIP regulations.

The following summarizes the key provisions of the new regulations for coke oven batteries:

(1) Coke pushing operation—Requires that the coke pushing operation must be enclosed and that any air cleaning device is designed to reduce fugitive emissions to the minimum attainable through the use of the "best available technology."

(2) Charging operation—

a. Open charging—At no time shall the aggregated time of visible open charging emissions during any four consecutive charges equal more than 75 seconds.

b. Closed charging—At no time shall there be closed charging emissions during more than one charge out of any ten consecutive charges.

(3) Door emissions and leakages—

a. At no time shall door area emissions from any coke oven exceed 40% opacity, 15 minutes or longer after the last charge to that oven.

b. At no time shall there be any visible door area emissions from more than 10% of the door areas of operating coke ovens, excluding the two door areas representing the last oven charged on any battery and any door areas obstructed from view.

(4) Topside Emissions—

a. At no time shall there be visible topside emissions from more than 2.0% of the charging port seals on operating coke ovens in any battery, excluding visible emissions from no more than three ovens which may be dampered off.

b. At no time shall there be topside emissions from more than 5.0% of the offtake piping on operating coke ovens in any battery, excluding visible emissions from open standpipe caps on no more than three ovens which may be dampered off.

c. At no time shall there be any topside emissions from any point on the topside other than allowed emissions from charging port seals and offtake piping pursuant to items a. and b. above.

d. At no time shall there be any visible emissions from the coke oven gas collector mains.

The revised regulations establish measuring and recording techniques, equations for determining compliance,

#### ENVIRONMENTAL PROTECTION AGENCY

#### 40 CFR Part 52

#### [FRL 1273-3]

#### Approval and Revision of the Pennsylvania Implementation Plan

**AGENCY:** Environmental Protection Agency.

**ACTION:** Final rule.

**SUMMARY:** This notice announces the Administrator's approval of amendments to the Commonwealth of Pennsylvania's Air Resources Regulations as a revision of Pennsylvania's State Implementation Plan (SIP), pursuant to Section 110 of the Clean Air Act, 42 U.S.C. 7410. The purpose of the amendments is to establish a program for more effectively controlling particulate air contaminant emissions from coke oven batteries. The



and self-monitoring and reporting requirements for coke oven operators. However, an explicit procedure for evaluating the intermittent visible fugitive emissions from pushing control systems was not included. EPA believes that an explicit procedure is necessary to ensure the enforceability of these regulations. Consequently, DER is urged to adopt a procedure for evaluating visible fugitive emissions from the coke pushing operation prior to the submittal of its final nonattainment plan required under Sections 110 and 172 of the Clean Air Act as amended. The regulations also provide a mechanism for sources to petition for a deferred compliance schedule to achieve compliance with the proposed emission limitations. Compliance with the emission limitations must be achieved as expeditiously as possible, but in no event later than December 31, 1979.

On December 5, 1978 (43 FR 56910), the Regional Administrator proposed the amendments to DER's regulations as a revision to the Pennsylvania SIP and provided for a 30-day comment period ending January 4, 1979.

## II. Public Comments

In the notice of proposed rulemaking, EPA solicited comments on the amendments to Pennsylvania's Air Resources Regulations with particular emphasis on three provisions. The first two provisions raise issues as to whether or not either or both of two actions which DER may take under the new regulations become Federal law without having to be submitted to EPA as additional SIP revisions. The actions are: (1) The issuance of a deferred compliance schedule under the new section 127.42 and, (2) the determination, under subsection 129.15(c), that opacity levels in excess of 20% have no significant air quality impact. The question of whether or not EPA has the responsibility and authority to act independently under these sections was also raised. The third issue dealt with a potential misinterpretation of subsection 129.15(a) relating to the time during which pushing emissions must be enclosed.

EPA Region III received three sets of comments during the public comment period: one from the Pennsylvania DER, one from the Bethlehem Steel Corporation, and one from the United States Steel Corporation.

DER commented that EPA had pointed out an inadvertent error in subsection 129.15(a), i.e., that this subsection should refer to 129.15(c) and (e), not 129.15(c) and (d) as originally proposed. This clarification answers the

third question raised by EPA. EPA interprets this section consistent with the above representations, and DER is urged to revise the references in the regulation at the earliest opportunity to forestall any future problems of interpretation.

The general thrust of the other public comments is that DER does not have to submit as SIP revisions actions (1) and (2) discussed above and that EPA does not have the authority or responsibility to approve or disapprove those actions as future SIP revisions. DER stated that a regulation in its existing SIP, subsection 123.1(a)(9), allows it to make determinations of minor significance without submitting the actions as a SIP revision and thus its actions under subsection 129.15(c) also do not have to be submitted as SIP revisions. In addition, U.S. Steel submitted extensive comments to the effect that the regulations are unnecessary and not consistently achievable.

Detailed responses to these comments can be found in the Rationale Document prepared by EPA and which is available at the addresses listed above. To summarize EPA's findings, the above-mentioned amendments to Pennsylvania's Air Resources Regulations are approvable subject to the following conditions, interpretations and comments.

1. Any determination of minor significance under sections 123.1(a)(9) (relating to fugitive emissions) and 129.15(c) (relating to coke pushing operations) and establishment of a deferred compliance schedule under section 127.42 (relating to coke oven abatement plans) shall not take effect as a matter of federal law unless it is submitted to and approved by EPA as a SIP revision.

The basic reason for this requirement is that these actions were not expressly contemplated in the air quality demonstrations submitted by DER, in support of the former requirements on March 17, 1972 and in support of the new provisions on June 30, 1978. EPA realizes that under sections 123.1(a)(9) and 129.15(c) DER may not make a minor significance determination unless it finds that emissions from the source in question will not interfere with attainment and maintenance of the national ambient air quality standards. Moreover, DER may not establish a deferred compliance schedule under section 127.42 unless it finds that coke oven battery emissions will not present a substantial risk of endangering the public health and welfare. However, EPA has an independent responsibility under Section 110 of the Clean Air Act

to determine whether or not emissions limitations are sufficient to ensure attainment and maintenance of national ambient air quality standards. While the exercise of DER's discretion is, of course, binding for purposes of State enforcement, it is not binding on EPA for purposes of Federal enforcement unless approved by EPA as a SIP revision.

These three sections expressly provide that minor significance determinations and deferred compliance schedule establishments shall be made by DER. These sections do not provide, nor is it necessary that they do provide, that such determinations or establishments may also be made by EPA. Accordingly, EPA does not have authority to make such determinations or establishments.

2. With respect to U.S. Steel's comments challenging the necessity and consistent achievability of the new regulations, it is EPA's policy to encourage and assist States in using economically efficient pollution control methods. However, the Agency has no authority under the Clean Air Act to reject a requirement adopted by a State because it is too costly or too stringent. ("Stringency" refers to both the controls required and how quickly they must be implemented). In *Union Electric v. EPA*, 427 U.S. 246 (1976), the Supreme Court held that the Administrator "shall approve" a SIP if it satisfies the criteria of Section 110(a)(2) of the Clean Air Act (42 U.S.C. 7401), and that the Administrator may not consider its economic or technological feasibility.

Even though EPA did not include considerations of necessity and achievability in its decision regarding the approvability of the new regulations, it disagrees with U.S. Steel's comments, and it believes that the new regulations are both necessary and consistently achievable. (Further details can be found in the above-mentioned Rationale Document.)

## III. Approvability of the Proposed Revision

A request for a revision of a SIP must be approved by the Administrator if the revision meets the requirements of Section 110 of the Clean Air Act and of EPA's regulations, 40 CFR Part 51. The basic substantive requirement for approval of this SIP revision is that it not interfere with the attainment and maintenance of the national ambient air quality standards. The DER demonstrated that the new provisions are at least as stringent as the former requirements. This showing of equal or greater stringency is sufficient, in lieu of a complete air quality modeling



exercise, to approve the new regulations. (These regulations do not purport to be submitted in satisfaction of an overall amendment plan and control strategy demonstration pursuant to Section 172 of the Clean Air Act, 42 U.S.C. 7672.)

Therefore, the Administrator approves the amendments to Chapters 121, 123, 127, and 139 of Pennsylvania's Air Resources Regulations, subject to the above-mentioned conditions, interpretations, and comments, as a revision of Pennsylvania's State Implementation Plan, effective August 16, 1979. Consequently, the Administrator amends 40 CFR 52.2020 (Identification of Plan) of Subpart NN (Pennsylvania) to incorporate this plan revision into Pennsylvania's SIP.

Under Executive Order 12044 EPA is required to judge whether a regulation is "significant" and therefore subject to the procedural requirements of the Order or whether it may follow other specialized development procedures. EPA labels these other regulations "specialized". I have reviewed this regulation and determined that it is a specialized regulation not subject to the procedural requirements of Executive Order 12044.

(42 U.S.C. 7401-7642 et seq.)

Dated: July 6, 1979.

Barbara Blum,  
Acting Administrator.

Part 52 of Title 40, Code of Federal Regulations is amended as follows:

1. In § 52.2020 paragraph (c) (17) is added to read as follows:

#### Subpart NN—Pennsylvania

##### § 52.2020 Identification of Plan.

(c) The plan revisions listed below were submitted on the dates specified

(17) Amendments to Chapters 121 (§ 121.1), 123 (§§ 123.1, 123.13, 123.44), 127 (§§ 127.41 through 127.52, inclusive), 129 (§§ 129.15 and 129.16), and 139 (§§ 139.51, 139.52, 139.53 and 139.91), dealing with the control of coke oven battery operations; submitted on June 30, 1978 by the Pennsylvania Department of Environmental Resources.

[FR Doc. 79-21930 Filed 7-16-79; 8:45 am]

BILLING CODE 6560-01-M

## GENERAL SERVICES ADMINISTRATION

### 41 CFR Ch. 1

[FPR Temp. Reg. 51]

#### Telecommunication Acquisitions; Temporary Regulation

AGENCY: General Services  
Administration.

ACTION: Temporary regulation.

**SUMMARY:** This regulation sets forth contracting policies and procedures covering telecommunications; i.e., services, systems, facilities, and equipment within the Federal Government. It has been the general practice of Federal agencies to procure telecommunications from franchised common carriers; however, with the growth of the communication industry in competition with these carriers, more procurements are being made competitively. This temporary regulation will provide for the orderly procurement of telecommunications.

**DATES:** Effective date: September 17, 1979. Expiration date: August 31, 1981. Comments due on or before: October 15, 1979.

**ADDRESS:** Comments should be addressed to: General Services Administration (APR), ATTN: Mr. Philip G. Read, Director, Federal Procurement Regulations Directorate, Washington, DC 20406.

**FOR FURTHER INFORMATION CONTACT:** Robert R. Johnson, Procurement Policy and Regulations Branch (CPEP), 202-566-0834. (Sec. 205(c), 63 Stat 390; 40 U.S.C. 486(c))

In 41 CFR Chapter 1, the following temporary regulation is added to the appendix at the end of the chapter to read as follows:

[Federal Procurement Reg. Temporary Reg. 51]

To: Heads of Federal agencies;  
Subject: Telecommunication acquisitions.

1. **Purpose.** This regulation prescribes procurement procedures applicable to Government-wide telecommunication services, systems, facilities, and equipment.

2. **Effective date.** This regulation is effective September 17, 1979.

3. **Expiration date.** This regulation expires on August 31, 1981.

4. **Background.** It has been the general practice of Government agencies to procure telecommunication services and equipment primarily from franchised common carriers. However, with the growth of the communication industry in competition with these carriers, more procurements are being made competitively. To facilitate these competitive acquisitions, this temporary

regulation sets forth acquisition policies and procedures covering telecommunication services, systems, facilities, and equipment within the Federal Government.

5. **Explanation of change.** New Subpart 1-4.12, Telecommunications, is added to Part 1-4 as follows:

#### Subpart 1-4.12—Telecommunications

§ 1-4.1200 **Scope.** This subpart prescribes policies and procedures concerning the procurement of telecommunication services, systems, facilities, and equipment by Federal agencies. Management guidance related to telecommunication requirements and operations and the utilization of the Federal Telecommunications System (FTS) are contained in the Federal Property Management Regulations (FPMR) in Part 101-37.

§ 1-4.1201 **Definitions.** The definitions listed below are applicable to this Subpart 1-4.12.

§ 1-4.1201-1 **Functional telecommunication system specifications.** "Functional telecommunication system specifications" means: (a) The delineation of the requirements that the system is intended to satisfy and (b) the assumptions and facts underlying the requirements. The actual specification depends on the type of system to be procured, e.g., voice system, data system, or data service.

§ 1-4.1201-2 **Selection plan.** "Selection plan" means criteria and systematic procedures established to enable the Government to measure the proposal or bid of an offeror or bidder against the requirements of the Government as set forth in the solicitation document. These criteria and procedures shall be based on the Government's requirements and shall not be equipment or vendor oriented.

§ 1-4.1201-3 **Systems or items life.** "Systems or items life" means a forecast or projection of the period of time which begins with the installation of the systems or items and ends when the need for those systems or items has terminated. Systems or items life is established by the agency on the basis of its requirements and as set forth in the solicitation. Systems or items life is not synonymous with the actual life of the equipment (system or facility).

§ 1-4.1201-4 **Lowest overall cost.** "Lowest overall cost" means the least expenditure of funds over the systems or items life, price and other factors considered. Lowest overall costs shall include, but shall not be limited to, such elements as personnel, purchase price or rentals, maintenance, site preparation and installation, programming, and training.

§ 1-4.1201-5 **Comparative cost analysis.** "Comparative costs analysis" means a cost analysis procedure that considers the present value of money to be used in the acquisition of the requirement, computed in accordance with OMB Circular A-94, and includes all costs over the system's life.

§ 1-4.1202 **Telecommunication requirements.** Agency telecommunication requirements shall be submitted to the General Services Administration (GSA) in accordance with procedures outlined in the FPMR (Subpart 101-37.2) unless the agency





Approval of Revision of the Pennsylvania  
State Implementation Plan (AH018PA) - Cover Memorandum

MAY 31 1979

Jack J. Schramm      Original signed by  
Regional Administrator (3RA00)      Jack J. Schramm

J. Edward Roush, Director  
Office of Regional & Intergovernmental Operations (A-101)

Enclosed is a final rulemaking package pertaining to revisions of the Pennsylvania State Implementation Plan. The following elements are included in the enclosed package:

1. An Action Memorandum to the Administrator from the Regional Administrator, EPA Region III, recommending approval of proposed revisions to the Pennsylvania State Implementation Plan (original and one copy).
2. The notice of final rulemaking announcing the Administrator's decision (original and four copies).
3. A rationale document explaining the basis for the Administrator's decision.
4. Information submitted to Region III by the Pennsylvania Department of Environmental Resources. This information includes the amendments and additional support material as listed in Attachment #1. Due to the volume of material submitted, a portion of the support documentation is not being forwarded. This additional information is outlined in Attachment #2.
5. Public comments submitted to Region III.

The Regional Administrator has determined these revisions to be "special action" because certain aspects of the revisions raise two significant unresolved policy issues. The first deals with whether or not the State Agency can issue deferred compliance schedules or determine that opacity levels in excess of specified limits in some instances are of minor significance without submitting those actions to EPA as SIP revisions. The second issue is concerned with which of two methods is the more appropriate for handling coke oven visible emissions data.

As specified in the October 1975 guidelines, it is Region III's understanding that ORIO will hold copies of the rulemaking package for fourteen (14)



the fact that the new regulations do not require a level of control more stringent than EPA's Best Available Control Technology (BACT) levels for coke batteries. Furthermore, the fact that all but one of the coke plants in Pennsylvania are located in areas that are not attaining the national ambient air quality standards speaks to the necessity of the regulations.

In addition to the issues raised in the proposed rulemaking and by the public comments, this rulemaking action addresses the question as to which of two methods is the more appropriate for handling coke oven visible emission data. This question had been the subject of a recent court decision on the matter of Donner-Hanna Coke Corporation v. Costle, 12 E.R.C. 1780 (W.D.N.Y., 1979). However, the new Pennsylvania regulations will resolve this question as they contain specific procedures for handling the data.

The basic substantive requirement for approval of this SIP revision is that it not interfere with the attainment and maintenance of the national ambient air quality standards. The DER demonstrated that the new provisions are at least as stringent as, and more enforceable than, the former requirements. This showing is sufficient, in lieu of a complete air quality modeling exercise, to approve the new regulations. These regulations do not purport to be submitted in satisfaction of an overall attainment plan and control strategy demonstration, pursuant to Section 172 of the Clean Air Act, 42 U.S.C. 87672.

Consequently, we believe that the amendments to Pennsylvania's regulations submitted on June 30, 1978 do not interfere with the attainment or maintenance of the ambient air quality standards for particulate matter and therefore recommend that approval be granted.

The Federal Register notice enclosed for your signature summarizes the actions taken by EPA and the Commonwealth of Pennsylvania with regard to this SIP revision and announces the Administrator's approval of amendments to Chapters 121, 123, 127, 129 and 139 of Pennsylvania's Air Resources Regulations as a revision of Pennsylvania's State Implementation Plan, effective 30 days after publication in the Federal Register. The notice also announces the Administrator's decision that the State is required to submit to EPA as SIP revisions, specified actions that it may take under its new regulations. Concurrently, 40 CFR Section 52.2020 (Identification of Plan) of Subpart NN (Pennsylvania) is amended to incorporate this approved plan revision into the Pennsylvania SIP.



Approval of Revisions of the Pennsylvania  
State Implementation Plan (AM018PA) - Action Memorandum

MAY 31 1979

Jack J. Schramm Original signed by  
Regional Administrator J(3RA00)mm

Douglas M. Costle  
Administrator (A-100)

The Commonwealth of Pennsylvania submitted amendments to its Air Resources Regulations on July 10, 1973 and requested that they be reviewed and processed as a revision of Pennsylvania's State Implementation Plan (SIP). The purpose of the amendments is to establish a program for more effectively controlling particulate emissions from coke oven batteries. There are no regulations in the current SIP dealing specifically with particulate emissions from coke batteries. The regulations currently applied to coke batteries in Pennsylvania deal with general limitations on visible and fugitive particulate air contaminants from any source.

Public hearings were held by the Pennsylvania Department of Environmental Resources (DER) on three separate days in April, 1977, in accordance with 40 CFR Section 51.4. The Regional Administrator, Region III, proposed the amendments as a SIP revision on December 5, 1978 (43 FR 56910).

Following below is a summary of the issues raised by this rulemaking action and which is discussed in detail in the enclosed package.

✓ In its notice of proposed rulemaking, EPA solicited comments on the amendments to Pennsylvania's Air Resources Regulations with particular emphasis on three provisions. The key issue raised by these provisions centers around the question as to whether the DER can issue deferred compliance schedules or determine that opacity levels in excess of specified limits in some instances are of minor significance, without submitting these actions to EPA as SIP revisions. Two public comments were received that spoke in favor of not requiring these actions to be submitted as SIP revisions. We believe, however, that any action not expressly contemplated in the air quality demonstration submitted in support of a State's control strategy, that has the potential to change an emission limitation or postpone the effective date of an emission limitation, must be submitted as a revision to the SIP.

The other significant public comment received by EPA alleged that the new regulations are unnecessary and not consistently achievable. We do not agree with these contentions. This disagreement is based in part on

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calendar days from receipt. At the end of this period, if no non-concurrences have been received from an Assistant Administrator or the General Counsel, ORIO will forward the package to the Administrator for signature. It will then be transmitted to Jim Parker of OPE/DSR for publication in the Federal Register.

Copies of this package are being forwarded to the below-listed Headquarters and offices for their information. An additional copy is being forwarded to the Public Information Reference Unit (PIRU) for public inspection.

In accordance with W. Drayton's memorandum of February 26, 1979, the preamble of the enclosed notice of rulemaking contains boilerplate language identifying the action being taken as a specialized regulation.

If you have any further questions, please contact Mr. Israel Milner, Manager, Plans Management Group (FTS 3-597-8174).

Enclosure

cc:

Control Programs Development Division (CPDD)  
Division of Standards & Regulations (DSR)  
Office of General Counsel (OGC)  
Division of Stationary Source Enforcement (DSSE)  
Public Information Reference Unit (PIRU)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region III - 6th & Walnut Sts.  
Philadelphia, Pa. 19106

SUBJECT: Approval of Revision of the Commonwealth of  
Pennsylvania Implementation Plan (AH018PA)

DATE: MAR 30 1979  
Briefing Memorandum

FROM: Stephen R. Wassersug, Acting Director  
Air & Hazardous Materials Division (3AH001)

TO: Jack J. Schramm  
Regional Administrator

Enclosed for your concurrence is a notice of final rulemaking pertaining to the Administrator's approval of a revision to Pennsylvania's State Implementation Plan (SIP). This SIP revision adds a set of regulations designed to control fugitive particulate emissions from coke oven batteries. Prior to adopting these regulations, Pennsylvania had no regulations intended specifically for the control of particulate emissions from these sources.

The new regulations establish limits, in terms of visible emissions, for specific coke battery operations and, in addition, require that the coke pushing operation be enclosed. The regulations currently being applied to coke batteries are expressed in terms of general limitations on visible and fugitive emissions from any source, and a general process emission limitation that is being applied to coke battery waste heat stacks.

The basic substantive requirement for approval of this SIP revision is that it not interfere with the attainment and maintenance of the national ambient air quality standards. The Pennsylvania Department of Environmental Resources (DER) demonstrated that the new provisions are at least as stringent as, and more enforceable than, the former requirements. In addition, they reflect at least Reasonably Available Control Technology (RACT), and in some cases Best Available Control Technology (BACT). The showing of equal or greater stringency is sufficient, in lieu of a complete air quality modeling exercise, to approve the new regulations.

We have determined that this final rulemaking package is a "special action," as was the case with the proposed rulemaking package because certain aspects of the new regulations raise two significant policy issues discussed in detail in the enclosed package. The first deals with whether or not the DER can issue deferred compliance schedules or determine that opacity levels in excess of specified limits in some instances are of minor significance without submitting those actions to



Recommendation:

Please sign the enclosed Federal Register notice for the Commonwealth of Pennsylvania at your earliest convenience.

Enclosure



EPA as SIP revisions. The second issue is concerned with which of two methods is the more appropriate for handling coke oven visible emissions data. This latter issue had been the subject of a recent court decision in the matter of Donner-Hanna Coke Corporation v. Costle, Civ-77-232 (W.D.N.Y., filed February 12, 1979). However, the new Pennsylvania regulations will resolve this second issue since they contain specific procedures for handling the data.

During the public comment period that ended January 4, 1979 three comments were received, one from the Pennsylvania DER and two from steel companies. The general thrust of the comments were first, that DER has the authority to take the above-mentioned actions without submitting them as SIP revisions and second, that the proposed regulations are unnecessary and not consistently achievable. This second point was raised in extensive comments by U.S. Steel. We have determined, with concurrence by the Enforcement Division, that DER must submit SIP revisions for both actions. As to the second significant public comment, the State is acting within the framework of the Clean Air Act in promulgating regulations that are as stringent as they deem necessary (particularly in light of the 1976 Supreme Court Union Electric decision). In any event, EPA believes that the regulations are achievable using current technology; furthermore, the fact that all but one of the coke plants in Pennsylvania are in areas that are not attaining the national ambient air quality standards for particulates speaks to the necessity of the regulations. More detailed responses to the public comments can be found in the enclosed Rationale Document.

In view of the complexity of regulations controlling coke battery emissions and in view of the extensive negative comments submitted by U.S. Steel, we feel that it is reasonable to expect further action by U.S. Steel and possibly by Congressional representatives from the areas of U.S. Steel's concern. This further action is anticipated even though EPA is negotiating a Consent Decree with U.S. Steel involving the Clairton Coke Works in Allegheny County. By signing the Decree, U.S. Steel would waive its right to challenge the new regulations as they apply to the Clairton batteries. This would not preclude the Company from challenging the new regulations as they apply to the coke batteries at their Fairless Works in Bucks County, and it is expected that U.S. Steel will do so. In addition, further action by Bethlehem Steel Corporation may be anticipated in view of its comments about interpretations of the regulations that differ from our interpretations. Nevertheless, we feel that these regulations should be approved by the Agency and we request that you sign the enclosed Action Memorandum and Cover Memorandum as soon as possible.

Enclosure

ORIGINATED BY: Mark E. Garrison  
Environmental Engineer



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

TITLE 40 - PROTECTION OF ENVIRONMENT

CHAPTER I - ENVIRONMENTAL PROTECTION AGENCY

SUBCHAPTER C - AIR PROGRAMS

PART 52 - APPROVAL AND PROMULGATION

OF IMPLEMENTATION PLANS

APPROVAL AND REVISION OF THE PENNSYLVANIA

IMPLEMENTATION PLAN

AGENCY: Environmental Protection Agency

ACTION: Final Rule

SUMMARY: This notice announces the Administrator's approval of amendments to the Commonwealth of Pennsylvania's Air Resources Regulations as a revision of Pennsylvania's State Implementation Plan (SIP), pursuant to Section 110 of the Clean Air Act, 42 U.S.C. §7410. The purpose of the amendments is to establish a program for more effectively controlling particulate air contaminant emissions from coke oven batteries. The proposed revisions affect the following rules and regulations of the Pennsylvania Department of Environmental Resources (DER): Chapter 121 (relating to general provisions); Chapter 123 (relating to standards for contaminants); Chapter 127 (relating to construction, modification, reactivation, and operation of sources); Chapter 129 (relating to standards for sources) and Chapter 139 (relating to sampling and testing).

EFFECTIVE DATE: 30 days after publication of this notice.

CONCURRENCES								
SYMBOL								
SURNAME								
DATE								



TITLE 40 - PROTECTION OF ENVIRONMENT  
CHAPTER I - ENVIRONMENTAL PROTECTION AGENCY  
SUBCHAPTER C - AIR PROGRAMS  
PART 52 - APPROVAL AND PROMULGATION  
OF IMPLEMENTATION PLANS  
APPROVAL AND REVISION OF THE PENNSYLVANIA  
IMPLEMENTATION PLAN

AGENCY: Environmental Protection Agency

ACTION: Final Rule

SUMMARY: This notice announces the Administrator's approval of amendments to the Commonwealth of Pennsylvania's Air Resources Regulations as a revision of Pennsylvania's State Implementation Plan (SIP), pursuant to Section 110 of the Clean Air Act, 42 U.S.C. 87410. The purpose of the amendments is to establish a program for more effectively controlling particulate air contaminant emissions from coke oven batteries. The proposed revisions affect the following rules and regulations of the Pennsylvania Department of Environmental Resources (DER): Chapter 121 (relating to general provisions); Chapter 123 (relating to standards for contaminants); Chapter 127 (relating to construction, modification, reactivation, and operation of sources); and Chapter 139 (relating to sampling and testing).

EFFECTIVE DATE: 30 days after publication of this notice

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ADDRESSES: Copies of the revision and accompanying support material are available for public inspection during normal business hours at the following locations:

U.S. Environmental Protection Agency  
Region III  
Air Programs Branch  
Curtis Building, 10th Floor  
Sixth & Walnut Streets  
Philadelphia, Pennsylvania 19106  
ATTN: Ms. Patricia Sheridan

Pennsylvania Department of Environmental Resources  
Bureau of Air Quality and Noise Control  
P.O. Box 2063  
Harrisburg, Pennsylvania 17120  
ATTN: Mr. James K. Hambright

Public Information Reference Unit  
Room 2922 - EPA Library  
U.S. Environmental Protection Agency  
401 M Street, S.W.  
Washington, D.C. 20460

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SUPPLEMENTARY INFORMATION:

I. BACKGROUND

On June 30, 1978, DER submitted to the Regional Administrator, Region III, amendments to Pennsylvania's Air Resources Regulations designed to regulate particulate emissions from coke ovens, and requested that they be reviewed and processed as a revision of Pennsylvania's



State Implementation Plan (SIP).

Appropriate public hearings on the proposed amendments were held on April 5, 1977 in Norristown, Pennsylvania; on April 7, 1977 in Pittsburgh, Pennsylvania, and on April 12, 1977 in Harrisburg, Pennsylvania in accordance with 40 CFR Section 51.4.

Prior to these amendments, DER had no regulations pertaining uniquely to the control of particulate emissions from coke oven batteries. Control of particulate emissions from coke batteries was based on the application of regulations containing general limitations on visible emissions from any source and a general mass loading limitation that was applied to coke battery waste heat stacks. The new regulations contain emission limitations for individual coke battery operations that are designed specifically for those operations. Accordingly, the new regulations are intended to be more easily administered and enforced than the current federally-approved SIP regulations.

The following summarizes the key provisions of the new regulations for coke oven batteries:

- 1) Coke pushing operation - Requires that the coke pushing operation must be enclosed and that any air cleaning device is designed to reduce

fugitive emissions to the minimum attainable through the use of the "best available technology."

2) Charging operation -

a. Open charging - At no time shall the aggregated time of visible open charging emissions during any four consecutive charges equal more than 75 seconds.

b. Closed charging - At no time shall there be closed charging emissions during more than one charge out of any ten consecutive charges.

3) Door emissions and leakages -

a. At no time shall door area emissions from any coke oven exceed 40% opacity, 15 minutes or longer after the last charge to that oven.

b. At no time shall there be any visible door area emissions from more than 10% of the door areas of operating coke ovens, excluding the two door areas representing the last oven charged on any battery and any door areas obstructed from view.

4) Topside Emissions -

a. At no time shall there be visible topside emissions from more than 2.0% of the charging port seals on operating coke ovens in any battery, excluding visible emissions from no more than three ovens which may be dampered off.

b. At no time shall there be topside emissions from more than 5.0% of the offtake piping on operating coke ovens in any battery,



excluding visible emissions from open standpipe caps on no more than three ovens which may be dampered off.

c. At no time shall there be any topside emissions from any point on the topside other than allowed emissions from charging port seals and offtake piping pursuant to items a. and b. above.

d. At no time shall there be any visible emissions from the coke oven gas collector mains.

The revised regulations also establish measuring and recording techniques, equations for determining compliance, and self-monitoring and reporting requirements for coke oven operators. However, an explicit procedure for evaluating the intermittent visible fugitive emissions from pushing control systems was not included. EPA believes that an explicit procedure is necessary to ensure the enforceability of these regulations. Consequently, DER is urged to adopt a procedure for evaluating visible fugitive emissions from the coke pushing operation prior to the submittal of its final nonattainment plan required under Sections 110 and 172 of the Clean Air Act as amended. The regulations also provide a mechanism for sources to petition for a deferred compliance schedule to achieve compliance with the proposed emission limitations. Compliance with the emission limitations must be achieved as expeditiously as possible, but in no event later than December 31, 1979.

On December 5, 1978 (43 FR 56910), the Regional Administrator

SYMBOL	<del>proposed the amendments to DER's regulations as a revision to the Pennsyl-</del>				
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## II. PUBLIC COMMENTS

✓ In the notice of proposed rulemaking, EPA solicited comments on the amendments to Pennsylvania's Air Resources Regulations with particular emphasis on three provisions. The first two provisions raise issues as to whether or not either or both of two actions which DER may take under the new regulations become Federal law without having to be submitted to EPA as additional SIP revisions. The actions are; (1) the issuance of a

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deferred compliance schedule under the new section 127.42 and, (2) the determination, under subsection 129.15(c), that capacity levels in excess of 20% have no significant air quality impact. The question of whether or not EPA has the responsibility and authority to act independently under these sections was also raised. The third issue dealt with a potential misinterpretation of subsection 129.15(a) relating to the time during which pushing emissions must be enclosed.

EPA Region III received three sets of comments during the public comment period: one from the Pennsylvania DER, one from the Bethlehem Steel Corporation, and one from the United States Steel Corporation.

DER commented that EPA had pointed out an inadvertent error in subsection 129.15(a), i.e., that this subsection should refer to 129.15(c) and (e), not 129.15(c) and (d) as originally proposed. This clarification answers the third question raised by EPA. EPA interprets this section consistent with the above representations, and DER is urged to revise the references in the regulation at the earliest opportunity to forestall any future problems of interpretation.

The general thrust of the other public comments is that DER does not have to submit as SIP revisions actions (1) and (2) discussed above and that EPA does not have the authority or responsibility to approve or disapprove those actions as future SIP revisions. DER stated that a regulation in its existing SIP, subsection 123.1(a)(9), allows it to make determinations of minor significance without submitting the actions as a SIP revision and thus its actions under subsection 129.15(c) also

BOL		do not have to be submitted as SIP revisions.	CONCURRENCES		In addition, U.S. Steel	
NAME		submitted extensive comments to the effect that the regulations are				
E		unnecessary and not consistently achievable.				

Detailed responses to these comments can be found in the Rationale Document prepared by EPA and which is available at the addresses listed above. To summarize EPA's findings, the above-mentioned amendments to Pennsylvania's Air Resources Regulations are approvable subject to the following conditions, interpretations and comments.

✓ 1. Any determination of minor significance under ~~sub~~sections 123.1(a)(9) (relating to fugitive emissions) and 129.15(c) (relating to coke pushing operations) and establishment of a deferred compliance schedule under section 127.42 (relating to coke oven abatement plans) shall not take effect as a matter of federal law unless it is submitted to and approved by EPA as a SIP revision.

The basic reason for this requirement is that these actions were not expressly contemplated in the air quality demonstrations submitted by DER, in support of the former requirements on March 17, 1972 and in support of the new provisions on June 30, 1978. EPA realizes that under sections 123.1(a)(9) and 129.15(c) DER may not make a minor significance determination unless it finds that emissions from the source in question will not interfere with attainment and maintenance of the national ambient air quality standards. Moreover, DER may not establish a deferred compliance schedule under section 127.42 unless it finds that coke oven battery emissions will not present a substantial risk of endangering the public health and welfare. However, EPA has an independent responsibility



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under section 110 of the Clean Air Act to determine whether or not emissions limitations are sufficient to ensure attainment and maintenance of national ambient air quality standards. While the exercise of DER's discretion is, of course, binding for purposes of state enforcement, it is not binding on EPA for purposes of federal enforcement unless approved by EPA as a SIP revision.

These three sections expressly provide that minor significance determinations and deferred compliance schedule establishments shall be made by DER. These sections do not provide, nor is it necessary that they do provide, that such determinations or establishments may also be made by EPA. Accordingly, EPA does not have authority to make such determinations or establishments.

2. With respect to U.S. Steel's comments challenging the necessity and consistent achievability of the new regulations, it is EPA's policy to encourage and assist States in using economically efficient pollution control methods. However, the Agency has no authority under the Clean Air Act to reject a requirement adopted by a State because it is too costly or too stringent. ("Stringency" refers to both the controls required and how quickly they must be implemented). In Union Electric v. EPA, 427 U.S. 246 (1976), the Supreme Court held that the Administrator "shall approve" a SIP if it satisfies the criteria of Section 110(a)(2) of the Clean Air Act (42 U.S.C. §7401),, and that the Administrator may not consider its economic or technological feasibility.

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In addition to reviewing and evaluating the public comments, EPA evaluated the DER's submittal concerning the greater stringency of the new regulations. Although it is difficult to quantify visible emissions in terms of a mass emission rate, EPA staff believes that DER's submittal supports the conclusion that the new provisions are at least as stringent as, and in some cases more stringent than, the former requirements; furthermore, the new provisions are more enforceable than the former requirements. EPA staff believes that this showing is adequate to approve the amendments as a SIP revision. These regulations do not purport to be submitted in satisfaction of an overall attainment plan and control strategy demonstration, pursuant to Section 172 of the Clean Air Act, 42 U.S.C. §7672.

#### VI. Conclusion

Based on the foregoing, it is appropriate for the Administrator to approve the amendments to Chapters 121, 123, 127, and 139 of the rules and regulations of the Pennsylvania Department of Environmental Resources as a revision to Pennsylvania's State Implementation Plan. Similarly, it is necessary to amend 40 CFR Section 52.2020 (Identification of Plan) of Subpart NN (Pennsylvania) to incorporate the amendments into the approved SIP for Pennsylvania.



APPROVAL OF REVISION  
OF THE PENNSYLVANIA STATE IMPLEMENTATION PLAN

(REF: AH018PA)

RATIONALE DOCUMENT

I. Background

On June 30, 1978, the Department of Environmental Resources of the Commonwealth of Pennsylvania submitted to the Regional Administrator, Region III, amendments to its regulations governing the control of air pollutants, adding specific regulations for the control of particulate emissions from coke oven batteries. The Department requested that the amendments be reviewed and processed as revisions of the Pennsylvania State Implementation Plan (SIP) for the attainment and maintenance of national ambient air quality standards. The amendments consist of changes and additions to Pennsylvania's Air Resources Regulations.

Appropriate public hearings on the proposed amendments were held on April 5, 1977 in Norristown, Pennsylvania, on April 7, 1977 in Pittsburgh, Pennsylvania, and on April 12, 1977 in Harrisburg, Pennsylvania in accordance with 40 CFR Section 51.4. On July 10, 1978, the Regional Administrator acknowledged by letter to the Department the receipt of the proposed regulation changes. On December 5, 1978, (43 FR 56910) the Regional Administrator proposed the changes as a revision to the Pennsylvania SIP and provided for a 30-day public comment period ending January 4, 1979.

Prior to these amendments, the Department had no regulations pertaining uniquely to the control of particulate emissions from coke oven batteries. Control of particulate emissions from coke batteries was based on the application of regulations containing general limitations on visible emissions from any source and a general grain loading limitation that was applied to coke battery waste heat stacks. The new regulations contain emission limitations for individual coke battery operations that are designed specifically for those operations. Because of this the new regulations will be more easily administered and will provide better enforceability than the former regulations.

The amendments to the Pennsylvania Air Resources Regulations are summarized below:

ATTACHMENT #1

Information enclosed -

1. Letter from Department of Environmental Resources
2. Proposed Regulations and Revisions
- ✓ 3. Demonstration of Air Quality Impact
  - a. Outline of former regulatory approach
  - b. Demonstration that new regulations are more stringent
  - c. Discussion of greater enforceability of new regulations



ATTACHMENT #2

Additional documentation not forwarded but on file in Region III --

1. Public Hearings Transcripts
2. Testimony submitted subsequent to Public Hearing
3. DER responses to questions and comments
4. Studies - Reports reviewed and relied upon to prepare revisions
5. Visible Emission Data from Coke Ovens
6. Photographic Evidence





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The amendments to the Pennsylvania Air Resources Regulations are summarized below:

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SectionBrief Description

123.44(b)

Procedures and equations for compliance: this section also establishes specific procedures for inspectors to follow and gives equations for the purpose of processing visible emissions data to determine compliance.

127.41

Abatement of coke oven battery emissions: this section requires coke batteries to be shut down if they do not comply with the applicable regulations, except that a battery covered by an order obtained under section 127.42 will not be required to comply with this section.

127.42 through  
127.51 inclusive

Deferred compliance with revised emission limitations for coke oven batteries: these sections provide a mechanism for an operator of a coke oven battery or batteries to petition for a deferred compliance schedule to achieve compliance with the revised emission limitations. Compliance with the emission limitations must be achieved as expeditiously as possible, but in no event later than December 31, 1979. Requirements are spelled out for filing the petitions and advertising notice of the filing for a petition, and opportunities are provided for interested parties to protest the granting of a deferred compliance schedule based on a petition. Procedures are also specified for considering the protests, holding informal hearings on a petition, and for acting on a petition.

127.52

Existing air pollution abatement orders governing coke oven emissions: establishes means by which current orders can be incorporated into deferred compliance schedules.

129.15

Coke pushing operations: requires that the pushing operation be enclosed, and that visible fugitive emissions from any device installed to control pushing emissions be less than 20%. Visible fugitive air contaminants from the transporting of hot coke in the open atmosphere are required to be less than 10%. A procedure is established whereby the DER, upon application from a source, may determine that visible emissions from a pushing control device in excess of 20% have no significant air quality impact. When and if the DER makes that determination, the source is no longer required to comply with the 20% limit.

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Section

129.16

✓ 129.16 through  
139.53, inclusive

139.61

Brief Description

Door maintenance, adjustment and replacement practices: this section specifies procedures that must be followed to reduce door emissions, if a coke oven battery fails to meet the standards contained in section 123.44(a)(2) or (3) after the effective date of these standards at the battery in question.

Monitoring duties of certain sources: these sections describe the purpose, methods, and techniques of the monitoring duties, and the reports required under the monitoring duties.

Requirements: establishes the specific monitoring requirements of coke oven battery operators. For charging, topsides and doors, monitoring must be done on a daily basis and reports filed on a quarterly basis. For the pushing and waste heat stack particulate weight regulations, tests must be conducted annually and reports filed annually.

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## II. Control Strategy Demonstration

The Control Strategy Demonstration submitted by the Commonwealth of Pennsylvania is based on its claim that the new regulations are more stringent than the regulations that DER is currently applying to coke oven batteries in terms of allowable emissions expressed as pounds of particulates per hour. EPA's evaluation of the information supplied by Pennsylvania will determine its acceptability as a demonstration. The Commonwealth's statement in its letter forwarding this SIP revision, that these regulations do not constitute the total revision package for any nonattainment area, supports the possibility of accepting the new regulations on the basis of increased stringency. Area specific plans, to be submitted at a later date, are expected to provide a modeling demonstration that the national ambient air quality standards will be attained and maintained in the affected areas. The current SIP revision is intended as a first step in the process of nonattainment area planning.

### III. Submittal of Public Comments

During the 30-day public comment period following the December 5, 1979 notice of proposed rulemaking, EPA received comments from the U.S. Steel Corporation, Bethlehem Steel Corporation, and the Pennsylvania Department of Environmental Resources. In general, the comments focused on issues raised by EPA in the notice of proposed rulemaking. U.S. Steel also submitted extensive comments challenging the technological feasibility of the proposed regulations, the necessity of the proposed regulations, the methodology employed in developing the proposed emission limitations, the monitoring provisions of the proposed regulations, and other less significant provisions of the proposed regulations. The major portion of U.S. Steel's comments consisted of copies of documents submitted to the Pennsylvania DER during the above-mentioned public hearings. In addition, U.S. Steel submitted a copy of a November 30, 1978 letter from Earl F. Young, Jr., of the American Iron and Steel Institute to Donald R. Goodwin, Director, Emissions Standards and Engineering Division of EPA's Office of Air Quality Planning and Standards. This letter contained some of the findings of a Task Group headed by R. M. McMullen of Bethlehem Steel Corporation, regarding available coke oven emission data and the factors which affect emission control performance. In a cover letter forwarding these documents, U.S. Steel stated that the attachments constituted their specific comments and outlined some items that they felt were of particular concern. A summary of EPA's evaluation of all the public comments is contained in part V below.

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IV. Policy Issues

Two significant policy issues are raised by this SIP revision. The first deals with how visible emissions readings at coke batteries are to be treated, and the potential of such treatment to affect future Region III litigation involving coke oven batteries. A recent court decision involving the Donner-Hanna Coke Corporation held that, in the absence of a specified method for reading visible emissions in a State SIP, EPA's Method 9 must be used. This method includes data reduction procedures involving the averaging of six minutes' worth of visible emissions readings. Applying this data reduction procedure to visible emissions data from coke oven batteries is possible; however, the current Pennsylvania SIP regulation that is applied to coke oven batteries was not intended to be used with the Method 9 averaging technique. The aforementioned court decision tends to emphasize that the current amendments should be approved since they contain specified visible emission measurement techniques. (It should be noted that EPA may appeal the Donner-Hanna decision for other reasons; however, the appeal may be lengthy and the decision's impact may be important to current and anticipated Regional cases.)

The second significant policy issue deals with the question of State discretion in applying built-in exceptions to the emissions limitations, by way of making minor source determinations under Sections 123.1 and 129.15 and granting deferred compliance schedules under Section 127.42. This issue is discussed further in Section V below.

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## V. EPA Evaluation

The comments can be generally categorized into two subject areas: the first deals with the issues raised in the notice of proposed rulemaking and the second deals with the technological aspects of the proposed regulations. One of the issues raised in the proposed rulemaking was the relationship between Section 129.15(a) and 129.15(e) is not clear. Subsection (e) of the proposed regulation seems to permit the transport of hot coke in the open atmosphere if visible fugitive air contaminants do not exceed 10% opacity. Subsection (a) does not make reference to subsection (e) when specifying exemptions to the requirements for enclosure, and thus it is not clear how these subsections should be interpreted. In their comments, the Pennsylvania DER noted that in a revision to the section prior to final approval by the State Environmental Quality Board, a new subsection was added without reflecting the addition by changing the reference in subsection (a) from subsections (c) and (d) to subsections (c) and (e). EPA's comment pinpointed this inadvertent error and DER noted that the correct wording of the last phrase of the first sentence of §129.15(a) should be: "...except for such fugitive pushing emissions as are allowed by subsections (c) and (e) of the Section." This change would resolve the issue raised in the proposed rulemaking.

The other issues raised in the notice of proposed rulemaking deal with establishing deferred compliance schedules under Sections 127.42 - 127.52 and with making determinations of minor significance under subsection 129.15(c). The issues in both cases are similar: first, whether or not DER has to submit the deferred compliance schedules and the determinations of minor significance to EPA as SIP revisions and second, whether or not EPA has the authority to establish deferred compliance schedules upon a source's application to EPA and/or the authority to make independent determinations of minor significance.

Both DER and Bethlehem Steel Corporation expressed the belief in their comments that neither source determinations nor deferred compliance schedules, need be submitted to EPA as SIP revisions. According to DER, issuing a deferred compliance schedule "...would not constitute a variance from applicable SIP requirements but would instead constitute the application of approved SIP regulations under specific situations expressly contemplated within those regulations and in accordance with specific criteria as set forth in those regulations." Bethlehem Steel noted that every coke battery operator in Pennsylvania would be required to obtain a deferred compliance schedule and thus a SIP revision would not be necessary. With regards to the minor source determinations, DER stated that the same argument applies here as applies to the issuance of deferred compliance schedules, i.e., that a determination of minor significance would constitute the application of approved SIP regulations. Furthermore, DER stated that an already-approved regulation, Section 129.1(a)(9), allows for



such minor source determinations without the requirement for a SIP revision. Finally, DER believes that a minor source determination conforms with Section 110 of the Clean Air Act since a finding must be made that a source will not prevent or interfere with the attainment or maintenance of any ambient air quality standard in order to determine that a source is of minor consequence. Bethlehem Steel contended that a minor source determination would in fact be a determination that a source is in compliance with the SIP.

In response to these contentions, EPA believes that an air quality demonstration submitted by a State in support of a control strategy is the critical factor. If the situations referred to in the regulations were expressly contemplated in an air quality demonstration, and such a demonstration were accepted as showing attainment and maintenance of standards, the State could then exercise discretion within the limits of those situations. However, for those parts of the regulations covering minor source determinations and deferred compliance schedules, the State did not demonstrate that their application would not adversely affect attainment and maintenance of standards. In fact, the demonstration that the new regulations are more stringent than the former regulations was based on the assumption that the technology required by the new regulations would achieve 95% control of pushing emissions. It is conceivable that a system could be installed that achieves a lower capture efficiency but still meets the requirements for a minor source determination, and in this case the "more stringent" argument may not hold. As far as the current Section 123.1(a)(9) (dealing with minor sources) is concerned, it has been EPA's intention that a SIP revision be submitted for determinations under the section, although no determinations have been submitted to date. EPA further believes that a minor source determination would cause problems with enforceability if not specifically approved as part of a future SIP revision. The only emission limitation that EPA could apply to a source of fugitive emissions with a minor source determination which had not yet been approved as part of the SIP would be the prohibition of any fugitive emissions.

It should be noted that the requirement to submit a SIP revision is not meant to limit DER's discretion in applying the appropriate sections. DER can make whatever determinations it feels appropriate, with EPA review as provided for in Section 110 of the Clean Air Act wherever there is a potential to affect the air quality demonstration or control strategy.

Further comments received from U.S. Steel comprise the second subject area, i.e. the technological aspects of the proposed regulations. The Pennsylvania Department of Environmental Resources responded to U.S. Steel's comments in a document entitled "Department Responses to Questions



ductions are usually achieved by following a complex sequence of steps to prepare an oven for a charge of coal ("stage charging"). Thus operating and maintenance (O&M) practices at a given coke battery can have a significant effect on the level of charging emissions. The same can also be said of the level of emissions from topsides and doors. Observations made at well-controlled batteries employing the correct O&M practices show that the proposed Pennsylvania standards are achievable. A reasonable extrapolation from this set of data can be made; namely, that the standards can be achieved consistently. EPA staff feel that data obtained from batteries that are not well-controlled should not be included in the standard-setting process, as the standards should encourage improved and consistent performance. This is particularly important since significant emissions can result if proper O&M practices are not followed. EPA observations at coke batteries, carried out after the data base for the Pennsylvania regulations was developed, have further confirmed that these regulations can be achieved using currently available technology.

B. The proposed NESHAPS standards referred to by U.S. Steel (an official proposal of the standards has not, in fact, been made - they are still in draft form) did employ statistical adjustments for the charging standard. The basis for these adjustments is that the duration of visible emissions from well-controlled charging apparently follows a log-normal frequency distribution. With this type of distribution, standard statistical procedures can be applied to adjust an allowable emission limit based on the duration of visible emissions to the "99% confidence level." This means that, if a single set of observations is taken where the duration of visible emissions exceeds the allowable, one can be 99% confident that the battery where the observations were taken is in fact out of compliance.

EPA staff feels that in the context of the SIP development process, the statistical adjustments are not necessarily appropriate. The adjustments were made, in the draft NESHAPS standards, to data that was collected at a single battery that showed the best charging performance of the four batteries considered for those standards. After making the adjustments, the suggested standard is still more stringent than the Pennsylvania standard. U.S. Steel recommends that the adjustments be applied to a data base taken over a large number of batteries for a long period of time. This would result in a standard more lenient than the Pennsylvania standard. EPA staff feels that a standard set in the way that U.S. Steel recommends would be a disincentive to improved and consistent performance, that such a standard has the potential to allow unacceptably high levels of emissions (by allowing charging emissions at well-controlled batteries to increase to a level set by also considering batteries that

are not as well controlled), and that the Pennsylvania charging standard is a reasonable one based on the data available to the DER and on data gathered since the time the standard was set. As to topside emissions, a primary technique to reduce the number of leaks is to apply a luting material to the leaks (thereby sealing them). The number of leaks is thus inversely proportional to the effort applied to luting, which in turn can be increased by applying additional manpower as necessary. Because of this relatively simple control technique, the number of topside leaks does not display the statistical characteristics that charging emissions seem to display. Hence it is even more inappropriate to apply the statistical adjustments to topsides emissions than it is to apply them to charging emissions.

C. The standards should reflect the correct procedures that will result in the least emissions. Charging data for U.S. Steel - Fairfield Works for the period November 30 - December 1, 1976 were not included in standards development because the data did not reflect the emissions that result when the operational criteria for stage charging are met.

### 3. Hardware required

✓ is Issue: Coke battery waste heat stacks (combustion stacks) cannot meet the visible emissions regulation even while meeting the mass emission (grain loading) limitations. Achieving compliance with the visible emissions regulations would require the installation of major hardware (ESP's) which are both expensive and difficult to retrofit. In addition, EPA has "uncoupled" the weight and visible emissions standards in its own regulations.

Response: Particulate emissions from waste heat stacks originate from the burning of fuel in the underfire system and also from the coking process through leaks in the oven walls. As such the waste heat stack emissions are intermittent and can fluctuate greatly over time. Because of this, it is very important to have an independently enforceable regulation controlling visible emissions from waste heat stacks. This regulation allows measures to be taken to correct an air pollution problem that is manifested by high visible emissions without going to the delay involved in performing a stack test.

Data that EPA has available show that it may be possible for a coke battery waste heat stack to achieve a complying mass emission rate while exceeding the Pennsylvania visible emission limitation. DER's approach to situations like this (where a source complies with the mass emission limit but not with the visible emissions limit) has been to enforce the mass and visible emissions limits separately, but also to treat each source on a case-by-case basis when there appears to be a reason to



alter this approach. EPA's New Source Performance Standards (NSPS), which U.S. Steel is apparently referring to, do provide a mechanism by which a source can petition the Administrator for a relaxation of an applicable, visible emissions limitation when the applicable mass emission limit is being met; however, the mechanism only applies to NSPS-affected facilities. Coke batteries are not subject to NSPS. Due to the importance of a separately-enforceable regulation for coke battery waste heat stacks, EPA staff does not feel that it is necessary to ask DER to alter their regulations to provide a similar mechanism.

#### 4. Monitoring provisions

Issue: Monitoring should be required on a once-per-week basis (instead of once daily) for charging operations, and for determining the extent of emissions from doors and topsides. A long-term average of ten weeks' data should be used to determine compliance with the standards. Opacity greater than 20% should be recorded for charging and topside emissions, rather than any visible emissions, to eliminate the inclusion of "cigarette-puff", i.e. very small leaks in determining compliance. U.S. Steel has a large data base which is based on readings greater than 20% opacity.

Response: A requirement that 10 weeks would be necessary to determine compliance places an unrealistic burden on DER. Significant emissions can result if proper O&M practices are not followed. The EPA staff feels that the daily monitoring requirement provides an important incentive to ensure that emissions consistently fall within the allowable limits. Reading a percent opacity on the top of a coke battery where the observer cannot always control the variables (background color, position of sun, etc.) required for a valid opacity reading is difficult. A standard based on reading any visible emissions avoids the potential problems with reading opacity on top of a coke battery. Furthermore, the new Pennsylvania regulations were based on data taken as "any visible emission".

#### 5. Control of Pushing Emissions

Issues: Pushing controls are high cost, low benefit, energy intensive; the process weight rate should be deleted and a standard adopted based on opacity, i.e. 30 seconds above 60% allowed for five consecutive pushes: "essentially the standard in effect at Clairton"; other states are not requiring pushing control.

Responses: EPA staff believes that pushing emissions are significant and must be enclosed, as no coke oven operator has shown



that pushing emissions can be consistently kept to an acceptably low level without enclosure (see also response to 1, above). This belief is based on studies that have indicated that uncontrolled pushing emissions account for a significant portion of the total uncontrolled emissions from a coke battery. The standard in effect at Clairton is, in fact, an interim standard in a program designed to eventually provide for enclosed pushing. Very few states have actually adopted coke battery-specific regulations. Of the ones that haven't, many have general visible or fugitive emission limits stringent enough to require enclosed pushing. Of states that have adopted coke battery-specific regulations, California and Illinois do require enclosed pushing.

#### 6. Control of Charging Emissions

##### Issues:

- A. Emissions greater than 20% should be recorded instead of any visible emission.
- B. The Pennsylvania standard is not consistently achievable.
- C. In the "definitions" Section (8121.1), delete open chuck doors from the definition of open charging emissions.
- D. Physical limitations on some batteries lead to non-uniform performance at different batteries using the same control equipment and techniques.

##### Responses:

- A&B. These issues are discussed in 4 and 2, above.
- C. Open chuck doors can be a significant source of emissions that are also relatively easy to control, by maintaining proper aspiration of the oven or by installing smoke boots. DER felt that the control of emissions from open chuck doors could be accomplished by including the emissions in the charging standard.
- D. As to the variability among batteries employing the same control techniques, EPA staff feels that the Pennsylvania charging standard allows enough leeway for that variability while still requiring adequate charging emission control. Properly executed stage charging should result in emissions very close to zero, or no more than just a few seconds per charge. The Pennsylvania standard, 75 seconds of visible emissions allowed per 4 consecutive charges, accounts for an aberrant charge every four charges.

B. Issue: Section 127.41 (coke batteries must shut down or obtain a deferred compliance schedule if they cannot comply) should be deleted.

Response: No basis for this request was given, other than the section is "unrealistic". EPA staff believes that DER is not being unrealistic by including this requirement.

C. Issue: The compliance date for an order under section 127.42 should not be December 31, 1979; rather, it should be 30 months from the date that an order is issued.

Response: EPA staff believes that the December 31, 1979 deadline is justifiable in light of the fact that compliance with the former Pennsylvania regulations would have required essentially the same types of controls that the new regulations require. There has been adequate time since the original Pennsylvania SIP was approved to install these controls. The latest effective date of any of the new DER regulations was December 31, 1977. Thus EPA staff feels that there has been adequate time to prepare for the further adjustments required by the new regulations, to meet the December 31, 1979 deadline.

D. Issues: Sections 127.44, 127.45, 127.46, and 127.47 should be deleted.

Response: No basis was provided whatsoever for the request. These sections provide an opportunity for the public to comment on a proposed delayed compliance schedule, and should be retained.

E. Issue: The words "adequately demonstrated" should be added to the control technology requirement for new coke batteries.

Response: The section of the Pennsylvania regulations dealing with the construction of new coke batteries is not being considered in this SIP revision.

F. Issue: U.S. Steel's Clairton Coke batteries should be added to the list of existing batteries.

Response: The Clairton batteries are located in Allegheny County. The County's Health Department has regulations governing coke battery emissions which are a part of the federally-approved SIP. The current SIP revision does not propose to change the Allegheny County Health Department rules and regulations, hence Clairton should not be included in the list of existing coke plants.





COMMONWEALTH OF PENNSYLVANIA



DEPARTMENT OF ENVIRONMENTAL RESOURCES

The Secretary

POST OFFICE BOX 1467  
HARRISBURG, PENNSYLVANIA 17120

June 30, 1978

Mr. Jack J. Schramm  
Regional Administrator  
U.S. Environmental Protection Agency  
Region III  
6th and Walnut Streets  
Philadelphia, Pennsylvania 19106

Dear Mr. Schramm:

This is to officially request EPA approval of the recent modifications to Pennsylvania's Air Resources Regulations, related to particulate emissions from coke oven batteries, for incorporation as revision to the State Implementation Plan (SIP) for Pennsylvania. The purpose of these revisions is to establish a program for more effectively regulating particulate air contaminant discharges from coke ovens. The sections of Pennsylvania's regulations affected by the modifications are as follows: (§§121.1, 123.1, 123.13, 123.44, 127.41, 127.42, 127.43, 127.44, 127.45, 127.46, 127.47, 127.48, 127.49, 127.50, 127.51, 127.52, 129.15, 129.16, 139.51, 139.52, 139.53, and 139.61).

It should be noted that these regulations are not envisioned as the total revision package for any nonattainment area. Area specific plans will be submitted at a later date for nonattainment areas as required by the 1977 Clean Air Act Amendments.

I have enclosed seven (7) copies of the specific regulatory revisions as Appendix I and seven (7) copies of the analysis of the stringency of the proposed SIP revisions as Appendix II. One (1) copy of the pertinent supporting material is enclosed as Appendix III. This includes the entire record (exhibits, correspondence, and testimony) before the Environmental Quality Board (EQB) prior to its promulgation of the new regulations. An index of these documents has been compiled for your reference. You should be aware that several photographic exhibits were included as part of the EQB record (Appendix E, E-1-E-5). Two of these exhibits were still photographs, xerox copies of which are

RECEIVED  
PLANS MANAGEMENT

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June 30, 1978

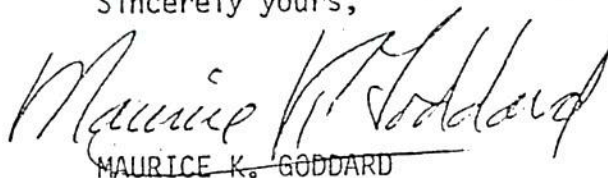
included, and a third exhibit was a copy of EPA's film of the U.S. Steel Fairfield coke oven operation, to which I presume you have access. The other two exhibits, film of Bethlehem Steel Corporation's Franklin Batteries and U.S. Steel Corporation's Clairton coke works, have not been included in the Department's submission, as extra copies of the films are not available. I suggest that you have the appropriate staff personnel contact Mr. James K. Hambright to arrange a viewing of these films. We hereby request that these revisions herein noted and supporting material be approved as amendments to the Pennsylvania SIP.

As indicated by portions of Appendix I, additional modifications not related to coke ovens were made to Pennsylvania's Air Resources Regulations. Official submission of these changes to be incorporated as part of the SIP will follow shortly.

Appropriate public hearings on the proposed amendments were duly advertised and held on Tuesday, April 5, 1977, at 10 a.m., Norristown Regional Office, Second Floor Conference Room, 1875 New Hope Street, Norristown, Pennsylvania; Thursday, April 7, 1977, at 10 a.m., Pittsburgh State Office Building, Room 1609, 300 Liberty Avenue, Pittsburgh, Pennsylvania; and Tuesday, April 12, 1977, at 10 a.m., Fulton Bank Building, Second Floor Conference Room, Third and Locust Streets, Harrisburg, Pennsylvania. Additional information regarding the hearings is contained on page 2251 of the Pennsylvania Bulletin, Vol. 7, No. 33 (Appendix I). The subject hearings were held in accordance with 40 CFR Part 51, §51.5.

If you have any questions concerning this submission, please contact Mr. James K. Hambright, Director, Bureau of Air Quality Control, Post Office Box 2063, Harrisburg, Pennsylvania 17120.

Sincerely yours,



MAURICE K. GODDARD

Enclosures  
Appendix I  
Appendix II  
Appendix III

INDEX OF RECORD OF RULEMAKING  
PROCEEDING BEFORE THE EOR



INDEX OF RECORD OF RULEMAKING PROCEEDING BEFORE THE FOR

Text of Revised Proposed Regulations

Appendix A: Testimony

Documents\*

- A-1 Transcript of Public Hearing, April 5, 1977, Norristown, Pennsylvania
- A-2 Transcript of Public Hearing, April 7, 1977, Pittsburgh, Pennsylvania
- A-3 Transcript of Public Hearing, April 12, 1977, Harrisburg, Pennsylvania

\*Already in the Possession of the FOR prior to the Department's July 12, 1977 submittal.

A-4 TESTIMONY SUBMITTED SUBSEQUENT  
TO PUBLIC HEARING\*

May 2, 1977 William E. Schantz  
Jaendl's Turkey Farm

May 5, 1977 Ronald J. Chleboski  
Allegheny County Health Department

May 6, 1977 Daniel W. Hannan  
United Steelworkers of America

Study on effects of coke oven emissions on  
the health of employees in coke plants

Post-Hearing Brief of United Steelworkers of  
America on Standard for Coke Oven Emissions  
(6/16/76)

Position of United Steelworkers of America on Proposed  
Coke Oven Regs (9/30/75)

Reprint from Federal Register by United Steelworkers  
of America (10/22/76) Part III: Dept. of Labor  
Occ. Safety and Health Administration, Final Occ.  
Safety and Health Standard for Exposure to Coke Oven  
Emissions

May 10, 1977 Robert J. Middleton  
Pennsylvania Aggregates Association

May 10, 1977 Jon M. Anderson  
Koppers

May 11, 1977 F. L. Lindsay  
Wheeling-Pittsburgh Steel Corp.

May 12, 1977 Robert A. Clancy  
Alan Wood Steel Company

May 12, 1977 David M. Anderson  
Bethlehem Steel Corporation

May 12, 1977 R. Dworek  
U. S. Steel

May 13, 1977 Gordon M. Rapier  
U.S. Environmental Protection Agency  
Region III

May 13, 1977 Ws Wilson  
J & L Steel

Range of Total Emissions for Sets of 5 Con-  
secutive Charges, Tables I-IV

J & L - Pgh. Works, Coke Oven Charging

J & L - Aliquippa Works, Coke Oven Sealing

Air, Land or Water: The Dilemma of Coke Plants  
Wastewater Disposal by Robert W. Dunlap and  
Francis Clay McMichael, Environmental Studies  
Institute, Carnegie-Mellon University

May 13, 1977 Raymond K. Denworth, Jr.  
Philadelphia Coke Co., Inc.

May 18, 1977 Thomas G. McCloskey  
Citizens Advisory Council

\*Already in the Possession of the FOR prior to the Department's July 12,  
1977 submittal.



## Appendix B: Department Responses to Questions and Comments

### Documents

B-1	Introduction - The Standard-Setting Process . . . . .	i-iv
B-2	Commentator Code . . . . .	v
B-3	Presentation of Originally Proposed Regulations Their Revised Form and the Basis for Both . . . . .	1-143
	Also, Commentator Issues Raised in Testimony and the Department's Response to Each	
B-4	Response to General Comments of Alan Wood Steel Company on Proposed Coke Oven Regulations . . . . .	1-5
B-5	Comparison of Proposed Coke Oven Regulations with Standard in Effect in Other States and Economic Impact . . . . .	1-4

Appendix C: Miscellaneous Studies and Reports Reviewed  
and Relied Upon by the Department

Documents:

- C-1 Modeling of Coke Oven Batteries (A Meteorological Study of Ambient Air Quality Impact)
- C-2 Supplementary Ambient Air Quality Impact Study Data
- C-3 Guidance on Levels of Control for New By-Product Coke Batteries Locating in Areas Exceeding the NAAQS.
- C-4 Coke-Oven-Door System Technology: Task-Force Progress Report on Activities to Improve Koppers Doors at Clairton Works, December 3, 1976.
- C-5 Coke-Oven-Door System Technology: Field Data From Clairton Works, December 3, 1976.
- C-6 Source Testing of a Stationary Coke-Side Enclosure: Burns Harbor Plant, Bethlehem Steel Corporation (EPA Study)
- C-7 Results of Emission Testing by Bethlehem Steel Corporation at its Burns Harbor Plant Shed, 1974 Data.
- C-8 Testimony of F.C. Moreno, Coke Worker, Kaiser Steel Corp., Before the South Coast Air Quality Management District Hearing on April 1, 1977.
- C-9 Minutes of the South Coast Air Quality Management District Board, April 1, 1977.
- C-10 U. S. Patent, May 18, 1976, For Coke Oven Door Hood Device.
- C-11 Standards Support and Environmental Impact Statement: an Investigation of the Best Systems of Emission Reduction for the Charging Operation and Topside Leaks on By-Product Coke Ovens. (EPA Report)
- C-12 Effects of Water Quality on Coke Quench Tower Particulate Emissions By Carl Edlund, EPA.
- C-13 Letter of June 20, 1977 to Dr. Maurice K. Goddard, Secretary, Pennsylvania Department of Environmental Resources, From Dr. Eula Bingham, Assistant Secretary of Labor, Occupational Safety and Health Administration, U. S. Department of Labor, Concerning Dr. Goddard's Inquiry Regarding the Compatibility of the Proposed Coke Oven Regulations and the Exposure Standards of OSHA.

- (CONTINUED)
- C-14 Deposition of Mr. Carl R. Symons, Bethlehem Steel Corp. on December 4, 1975 in the Matter of Bethlehem Steel Corp. vs. Commonwealth of Pennsylvania, DER.
  - C-15 Deposition of Mr. Carl R. Symons, Bethlehem Steel Corp. Continued on August 18, 1976 in the Matter of Bethlehem Steel Corporation vs. Commonwealth of Pennsylvania, DER.
  - C-16 Control of Pusher-Side Coke-Oven Door Emissions by C. R. Symons, Sr. Research Engineer, Bethlehem Steel, October 18, 1976.
  - C-17 Deposition of Mr. Robert M. Harvey, Bethlehem Steel Corp. Continued on August 4, 1976 in the Matter of Bethlehem Steel Corporation vs. Commonwealth of Pennsylvania, DER.
  - C-18 Gas Cleaning Requirements for Coke-Pushing Emissions-Burns Harbor Coke Side Shed by C. R. Symons, Sr. Research Engineer, Bethlehem Steel, January 17, 1975.
  - C-19 Deposition of C. R. Symons, Bethlehem Steel Corporation on May 19, 1976 (with Exhibit - Appendix III Attached) In the Matter of Bethlehem Steel Corporation vs. Commonwealth Of Pennsylvania, DER.
  - C-20 Emission Testing and Evaluation of Ford/Koppers Smokeless Coke Pushing System, Prepared by Clayton Environmental Consultants, Inc. for the EPA, May 5, 1976.
  - C-21 Volume 2 of C-20 January 8, 1976.
  - C-22 Volume 3 of C-20 January 8, 1976
  - C-23 Letter of April 7, 1977 from Mr. Richard Dworek, Associate Director, Environmental Control - East concerning U. S. Steel Corporations's door research program and a two page attachment concerning door sealing times.
  - C-24 Standards support and Environmental Impact Statement, an Investigation of the Best Systems of Emission Reduction for Pushing Operation on By-Product Coke Ovens By EPA.
  - C-25 Particle Size Distribution of Coke Side Emissions from By-Product Coke Ovens, GCA Corporation August 1976 for EPA.



## Appendix D: Visible Emission Data Used by the Department

### Documents:

- D-1 List of Raw Visible Emission Data Sets
- D-2 Charging Emission Data
- D-3 Topside Emission Data
- D-4 Door Emission Data

## Appendix E: Photographic Evidence

- E-1 Photograph of Charging, Bethlehem Steel, Bethlehem, November 3, 1975.
- E-2 Photograph of Pushing, Bethlehem Steel, Franklin Works, Johnstown, August 20, 1975.
- E-3 Movie Film Exposed January 1975 - Subject: Charging Operations Clairton Coke Works.
- E-4 Movie Film Exposed January 14, 1976, DRR - Bethlehem Steel Corporation, Franklin Coke Works, Johnstown Plant Battery 17.
- E-5 Movie Film Exposed December 1976, U. S. Steel Corporation, Fairfield, Alabama (EPA Film).

Commonwealth of Pennsylvania  
SIP Revision - Coke Oven Regulations

APPENDIX I - REVISED PENNSYLVANIA REGULATIONS



Commonwealth of Pennsylvania, Department of Environmental Resources

Revised Air Pollution Regulations Applicable  
to By Product Coke Oven Batteries

(UNOFFICIAL TEXT) \*

SECTION	SUBJECT	PAGE
121.1	Definitions	1
123.1	Prohibition fugitive emissions	3
123.13	Process factor - Pushing	3
123.44 (a)	Allowable visible fugitive emissions	3
123.44 (b)	Measuring and recording techniques	4
	Equations for determining compliance	5
127.41	Abatement plans	6
127.42/.51	Deferred compliance petitions	6-9
127.52	Existing orders governing coke ovens	10
129.15	Control of coke pushing operations	11
129.16	Event Door non-compliance	11
	Mandated Work Practices (Door Non-compliance)	11
	Record keeping (Door Non-compliance)	12
	Other actions (Door Non-compliance)	12
139.51	Purpose	13
139.52	Monitoring Methods and techniques	13
139.53	Filing monitoring reports	13
139.61	Sources to be monitored	14
	Frequency of testing, sampling, observations	14
	Frequency of filing monitoring reports	14

\*Official text is contained in the Pennsylvania Bulletin publications which follow

Commonwealth of Pennsylvania  
SIP Revision - Coke Oven Regulations

APPENDIX II - DEMONSTRATION OF AIR QUALITY IMPACT

SIP REVISION REQUEST

for

Pennsylvania Coke Oven Regulations

The Department of Environmental Resources of the Commonwealth of Pennsylvania hereby submits as a revision of the federally-approved SIP the amendments to 25 Pa. Code Chapters 121, 123, 127, 129, 139 adopted by the Environmental Quality Board on July 26, 1977.<sup>1</sup> These amendments effect a Department objective expressed during the formulation of the Commonwealth's regulatory SIP in 1971-72<sup>2</sup>--namely, the development of regulations specifically addressing the particulate air contaminant emissions from by-product coke ovens. Prior to these amendments, the Department's regulatory approach for controlling fugitive particulate emissions from coke ovens<sup>3</sup> was directed toward the application of an opacity-based standard.

The new amendments to the regulations are designed in the same fashion as the Department's earlier regulatory approach in that, with the exception of the pushing process, allowable emissions from coke ovens are expressed in terms of visible emissions.

These new regulations differ significantly from the former requirements, however, in that the new regulations establish firm standards to be achieved for individual points of emission from the coke oven battery. As a result, the new

- 
1. The complete text of these amendments is attached in Appendix I.
  2. See "Public Hearings on Proposed State Implementation Plan" (1/17/72) p. 167-168 (Statements of Victor Sussman, Director, Bureau of Air Quality & Noise Control). Transcripts of the public hearings held on the proposed SIP were provided EPA as part of the documentation submitted by the Department in support of the SIP.
  3. Emissions from coke oven battery combustion stacks are not fugitive in nature and are subject to the provisions of 25 Pa. Code §§123.13, 123.41. These provisions, as applied to combustion stacks are not affected by the recent amendments.



regulations are more stringent than the former requirements. On a mass emission basis, they allow approximately one-third of the emissions allowed under the Commonwealth's emissions control strategy formerly approved by the Administrator of the Environmental Protection Agency. In addition, the new regulations are more easily administered and enforceable than the former requirements.

The new regulations would require the installation of best available control technology (BACT) for pushing emissions, as well as BACT for doors and topsides.<sup>4</sup> They therefore require a more stringent degree of reduction of emissions from existing sources in nonattainment areas than required by Section 172 of the Clean Air Act, as amended (42 USC §7502).<sup>5</sup> These regulations should be considered by EPA as the first step in the mandatory upgrading required by this section. Area specific plans for nonattainment areas will be submitted at a later date as required by the Federal Act.

The Department's submission in support of EPA approval of these amendments follows, subdivided into three sections which: a) outline the former regulatory approach; b) demonstrate that the new regulations are more stringent than the former regulatory approach; and c) discuss the greater enforceability of the new regulations.

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4. See, EPA Memo from Stanley W. Legro, "Guidance on Levels of Controls for New By-Product Coke Batteries Locating in Areas Exceeding the NAAQS", January 5, 1977.

5. Pursuant to Section 172, revisions to State Implementation Plans for any non-attainment area should provide for "such reduction in emissions from existing sources in the area as may be obtained through the adoption, at a minimum, of reasonably available control technology." (Emphasis added).

A. FORMER REGULATORY APPROACH

A.1 Applicable Regulatory Standards

Under the prior regulations, the following emission limitations were applicable to fugitive air contaminants from by-product coke oven operations:

FUGITIVE EMISSIONS

§123.1. Prohibition of certain fugitive emissions.

(a) No person shall cause, suffer, or permit the emission into the outdoor atmosphere of any fugitive air contaminant from any source except from:

- (1) Construction or demolition of buildings or structures.
- (2) Grading, paving and maintenance of roads and streets.
- (3) Use of roads and streets. Emissions from material in or on trucks, railroad cars and other vehicular equipment shall not be considered as emissions from use of roads and streets.
- (4) Clearing of land.
- (5) Tilling or applying amendments to the soil, preparing cover crops for incorporation into the soil and harvesting, while farming.
- (6) Stockpiling of materials.
- (7) Open burning operations.
- (8) Blasting in open pit mines. Emissions from drilling shall not be considered as emissions from blasting.
- (9) Other sources and classes of sources determined by the Department to be of minor significance with respect to the achievement and maintenance of ambient air quality standards or with respect to causing air pollution.

\* \* \*

§123.2. Fugitive particulate matter.

No person shall cause, suffer or permit fugitive particulate matter to be emitted into the outdoor atmosphere from any source or sources specified in items (1) through (9) of §123.1(a) of this Title (relating to prohibition of certain emissions) if such emissions are:

- (1) either visible, at any time, at the point such emissions pass outside the person's property, irrespective of the concentration of particulate matter in such emissions; or
- (2) not visible at the point such emissions pass outside the person's property and the average concentration, above background, of three samples, of such emissions at any point outside the person's property, exceeds 150 particles per cubic centimeter.



## VISIBLE EMISSIONS

### §123.41. Limitations.

No person shall cause, suffer or permit the emission into the outdoor atmosphere of visible air contaminants in such a manner that the opacity of the emission is:

- (1) equal to or greater than 20% for a period or periods aggregating more than 3 minutes in any one hour; or
- (2) equal to or greater than 60% at any time.

### §123.42. Exceptions.

The limitations of §123.41 of this Title (relating to prohibition of certain fugitive emissions) shall not apply to any visible emission:

- (1) when the presence of uncombined water is the only reason for failure of the emission to meet the limitations;
- (2) resulting from the operation of equipment used solely to train and test persons in observing the opacity of visible emissions; and
- (3) from sources specified in items (1) through (9) of §123.1(a) of this Title (relating to permitted fugitive emissions).

### §123.43. Measuring techniques.<sup>5</sup>

Visible emissions may be measured using:

- (1) any device approved by the Department and maintained to provide accurate opacity measurements; or
- (2) observers, trained and qualified to measure plume opacity with the naked eye or with the aid of any devices approved by the Department.

As stated in a letter dated March 24, 1977 from William M. Eichbaum, Deputy Secretary for Enforcement and General Counsel, Department of Environmental Resources to Henry R. Balikov, Chief, Legal Branch, U.S. EPA Region III, the above regulations are considered by the Department to be independent and separately enforceable.

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5. Since 1972 the Department has used an observation technique somewhat similar to, but not identical with, the procedures established by EPA for new sources in 40 C.F.R. Part 60, Appendix A, Reference Method 9. For example, the data reduction technique in subsection 2.5 (i.e. six minute averaging) is not used by the Department since the standard is expressed in terms of an aggregate of more than three minutes equal to or greater than 20% opacity or an instantaneous maximum or equal to or greater than 60%.



The Department is aware that some Region III staff members have interpreted 25 Pa. Code §123.1 as the only applicable regulation and as requiring the absolute prohibition of all by-product coke oven fugitive emissions. Such an interpretation is inconsistent with the language of the section itself, the emission control strategies submitted to EPA on January 27, 1972<sup>6</sup>, June 6, 1972<sup>7</sup> and December 14, 1972<sup>8</sup> and approved by the Administrator<sup>9</sup>, and the enforcement actions taken by the Department against the majority of coke plant operators within its jurisdiction.<sup>10</sup>

The Department submits that the record, as developed more fully below, demonstrates that control of fugitive emissions from by-product coke oven batteries based on an opacity standard made applicable to fugitive emission points on the battery has been the fundamental control strategy consistently employed by the Department. Indeed, an air quality demonstration which demonstrated that such a control strategy was sufficiently stringent to attain and maintain the primary

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6. Original SIP (40 CFR §52.2020(b))
  7. Allegheny County regulations - Article XVIII (40 CFR §52.2020(c)(4))
  8. Clairton Consent Agreement revision (40 CFR §52.2020(c)(8))
  9. See 40 CFR §52.2020, 52.2023
  10. Department consent orders were entered with: Bethlehem Steel Corporation (2/25/72); Alan Wood Steel Corporation (6/1/72); Interlake (Koppers) (6/1/72); U.S. Steel - Clairton (9/25/72 - Litigation settlement); Unilateral Department abatement orders were issued to: Crucible Inc. (9/5/73); Wheeling-Pittsburgh Steel Co. (9/5/73) and J & L Steel Corporation (Aliquippa Works) (9/5/73). Litigation against U.S. Steel-Fairless Works was commenced by equity complaint in Bucks County Common Pleas court May 7, 1973 and is still ongoing.

annual particulate matter standard was submitted to EPA by the Department as support for the "Clairton Revision" approved by EPA.<sup>11</sup> Having sufficiently demonstrated the stringency of this control strategy to the approval of EPA, the Department submits that under the United States Supreme Court's rationale expressed in the cases of Union Electric Co. v. EPA, \_\_\_\_ U.S. \_\_\_\_, 44 U.S. Law Week 5060 (1977) and Train v. NRDC, 421 U.S. 60 (1975), EPA must accept such allocation of emission limitations and may not now attempt to substitute its interpretation as to the allocation of emission limitations for that of the Commonwealth. Especially is this so when the record clearly evidences the fact that EPA, in actions both before and after the submission of such demonstration, acknowledged this control strategy to be the applicable SIP.

## A.2 Development of Emission Limitations

### A.2.a 1972 SIP submission and its relation to ongoing enforcement efforts

Aware that coke oven batteries were sources of air pollution which posed a threat to the public health from carcinogens associated with emissions, the Bureau of Air Quality and Noise Control initiated a compliance program for coke ovens in 1970-71 by sending an invitation to all Pennsylvania coke producers to participate in a cooperative control effort.<sup>12</sup> Discussions were held with representatives from the major steel companies throughout 1971 in efforts to arrive at an acceptable compliance standard. For the most part, these efforts proved unsuccessful; however, consent agreements were entered with Bethlehem Steel Corporation on February 25, 1972, and Alan Wood Steel Corporation on June 1, 1972.

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11. See references, footnotes 8 and 9, supra. This demonstration superseded earlier calculations contained in the original SIP submission (Tables 2.1, 2.2, "Appendix B") which indicated primary annual particulate matter standards would be attained assuming either full control or no control of fugitive coke oven emissions. Thus, the original SIP demonstrated that control strategies for coke oven batteries might be prescribed on a case-by-case basis ranging from full control to no control, as the Commonwealth chose, yet still result in meeting the primary annual NAAQS.

12. Copies of representative correspondence attached. (See Appendix A.-i)



The Bethlehem Abatement Order,<sup>13</sup> Order No. 72-533, recited the Department's factual finding that:

"...the emissions of air contaminants from the charging, coking and pushing operations of the by-product coke ovens...are causing air pollution...in that the emissions are in violation of the standards established under Chapter 123 of the Rules and Regulations of the Department of Environmental Resources..."

Paragraph 5 of the Order prescribed the final emission standard necessary to achieve compliance with regulations promulgated in Chapter 123 as follows:

5. No later than four years after approval by the Department of the plan submitted pursuant to paragraph 4, Bethlehem Steel Corporation shall have achieved the following performance standard:

There shall be no visible emission other than water mist or vapor in excess of #1 Ringelmann or 20% equivalent opacity for a period or periods aggregating more than 3 minutes of any consecutive 60 minutes from the operation of any battery of by-product coke ovens."

Interim standards, effective on or before June 30, 1973, were established which limited emissions from oven doors, charging, and pushing operations to no greater than 20 percent opacity for various aggregate time periods in any hour. The Alan Wood order,<sup>14</sup> signed three months later, contained the same final compliance standard as the Bethlehem order and similar interim compliance standards effective on or before June 30, 1973.

As a result of the Clean Air Act Amendments of 1970, the Department was, at the same time working to develop the State Implementation Plan by January 31, 1972. Hearings on the proposed regulations which were to be incorporated in the SIP proposal were held on December 1, 1971 (Philadelphia), December 2 (Harrisburg), December 3, 4 (Pittsburgh). After receipt of comments from industry

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13. A copy of Order No. 72-533 is attached. (See Appendix A-ii)

14. A copy of Order No. 72-548, entered with Alan Wood, is attached. (See Appendix A-iii)



and the public at these hearings, additional public hearings were held on January 14, 17 and 19, 1972 to consider the modifications and additions to the SIP document as first proposed.

The interface between the Department's formulation of its SIP and the negotiations with major steel companies begun in 1970 is indicated in the supplemental written testimony of U.S. Steel, which addressed the impact of the proposed visible emission regulations on coke oven fugitive emissions:

"In the event that the Board decides not to follow our recommendation and retains the opacity standards for sources not venting through a stack, we must object to the stringency of the allotment of only 3 minutes out of every hour for emissions to exceed 20% opacity.

The difficulty in meeting the proposed visible standards for coke oven emissions is reinforced by the recent Battelle Institute report commissioned by the Public Health Service which concluded on Page III 2 - 'The charging and pushing (discharging) of coke ovens is one of the major uncontrolled sources of air pollution in an integrated steel works. Practical methods for effective control of coke plant emissions are not yet in sight.'<sup>15</sup>

While steel company representatives did not, therefore, concentrate their attention on §123.1 as applying a total prohibition upon all fugitive emissions, the public interest groups, not having participated in the Department's compliance negotiations with the steel industry, did.

At the first round of public hearings in December, 1971, environmental groups, most notably the Group Against Smog and Pollution ("GASP") criticized the failure to include specific regulations applicable to coke oven fugitive emissions in the proposed control strategy. When the proposed regulations, as

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15. See "Supplemental Written Statement of Herbert J. Dunsmore, Director of Environmental Control, United States Steel Corporation", December 27, 1971 at page 8; also "Public Hearings on Air Pollution Regulations--December 3, 1971" p. 112. A copy of Mr. Dunsmore's December 27, 1971 statement is attached as Appendix A-iv.

revised to reflect comments received during the December hearings, remained silent on this subject GASP witness Albert Smith questioned Mr. Victor Sussman, Director of the Bureau of Air Quality and Noise Control, during the second round of hearings held in January, 1972 as to the reason for the Department's failure either to adopt or explain its reasons for not adopting specific regulations for by-product coke ovens.<sup>16</sup> Mr. Sussman indicated that the Department was then in the process of developing an emission standard for fugitive emissions from coke ovens and expressly referred to the ongoing negotiations of his abatement and compliance staff:

The question of why did we drop by-product coke ovens for not adopting specific regulations for by-product coke ovens. I indicated at the December hearing that we believe that coke ovens require a special regulation and the Department fully intended to develop one.

We are right now in the process of reviewing all literature. We have had our Abatement and Compliance Section spend a good deal of time preparing such standards. We are now reviewing these standards. They are not going to be ready by January 30. We will have them available as soon as possible after January 30, but I think it was pointed up very clearly at the December hearings that it is almost impossible to measure percentages from pushing and charging operations in an objective way as I had indicated and therefore, we need a better standard, better regulation that might involve specifications, and that's what we are working on right now.<sup>17</sup>

GASP also criticized the Commonwealth's control strategy as being overly optimistic, alleging, inter alia, that the IBM estimate of actual fugitive emissions of 6033 Tons per year<sup>18</sup> failed to include significant sources of fugi-

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16. See, "Public Hearings on Revised State Implementation Plan", January 17, 1972 at p. 45.

17. Ibid, p. 168.

18. Presumably this figure did not include fugitive emissions from sources identified in 25 Pa. Code §123.1(a)(1)-(8).



tive emissions, most particularly coke ovens. Smith testified that "from coke ovens alone we are talking about a probable underestimate of 30,000 Tons per year, compared to a total allowed figure of 6033 T/year".<sup>19</sup> GASP argued that by failing to provide a specific control strategy for fugitive emissions from coke ovens, and by grossly underestimating the resultant total yearly fugitive emissions, the Commonwealth's conclusion that the primary annual particulate matter standard would be achieved was somewhat questionable.

As a result of the suggestion of Chairman Elliot that GASP and the Department meet for further discussion of the coke oven issues raised by GASP, further meetings were held in Harrisburg. Additional calculations, using GASP's estimate of allowed fugitive air contaminants from by-product coke ovens, refined to 27,027 tons per year, were run by the Department and included as "Appendix B" of the 1972 SIP submission. The results indicated that, even if the Department were unable to develop a regulatory approach for control of fugitive emissions from by-product coke ovens, the annual primary NAAQS for particulate matter would be achieved.<sup>20</sup>

The Department's comments at the public hearing, and the subsequent calculations done in "Appendix B" of the 1972 SIP submission make it clear that the Department did not interpret or intend §123.1 as an absolute prohibition of fugitive emissions from coke oven batteries. The first formal expression of the Department's control strategy for fugitive emissions from coke ovens was contained in the February 25, 1972 Bethlehem Steel Corporation's Consent Order and

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19. "Public Hearings", supra note 16, at p. 52.

20. Appendix B projects 1975 expected air quality to be 76 ug/m<sup>3</sup> for the composite air basin used. Despite the fact that the primary standard is 75 ug/m<sup>3</sup>, it is the Department's understanding that EPA policy at the time considered a level of 76 to be effective compliance.



reaffirmed in the Alan Wood order dated June 1, 1972. Perhaps more important, for purposes of demonstrating that EPA acknowledged and approved this control strategy, are the submissions to EPA of Allegheny County's Article XVIII--which established emission limitations for the control of air contaminant sources in Allegheny County--and the Clairton Consent Decree. Consideration of each submission illustrates that both the Department and EPA viewed the control of fugitive emissions from coke ovens as based on compliance with an opacity standard.

#### A.2.b Submission of Allegheny County regulations

On June 6, 1972, five days after the Alan Wood order was signed, Governor Shapp transmitted to EPA Article XVIII of Allegheny County's Air Pollution Control Regulations. The provisions of Article XVIII were intended to provide the regulation of sources in the county and were approved by EPA as part of the Pennsylvania SIP.<sup>21</sup>

Article XVIII contained provisions regulating both fugitive emissions and visible emissions from sources, in language substantially similar to that contained in §§123.1 and 123.41 of the Department's Regulations.<sup>22</sup> Article XVIII,

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21. See 40 C.F.R. §52.2020(c)(4), 52.2023.

22. Section 1809.1, regarding allowable visible emissions reads in part as follows:

.1 Visible Air Contaminants

A. No person shall cause, suffer, or allow the emission into the open air of visible air contaminants in such a manner that the opacity of the emission is:

(1) Equal to or greater than No. 1 on the Ringelmann Scale or an equivalent opacity for a period or periods aggregating more than three (3) minutes in any one (1) hour, or

(2) Equal to or greater than No. 3 on the Ringelmann Scale or an equivalent opacity at any time.

B. The standards of Subsection .1A. shall not apply to any visible air contaminants when:

however, provided separate standards applicable to coke oven battery emissions. Subsection 1809.7 of Article XVIII established restrictions on the emissions from the charging, pushing, or coking and quenching processes. The provisions of Section 1809.7 are as follows:

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(continued)

22.

(1) The presence of uncombined water is the only reason for failure of the emission to meet the visible air contaminants standards, or

(2) Visible emissions result from a blast furnace slip, as provided in Section 1810.5, or

(3) Visible emissions result solely from the operation of a coke oven or battery of coke ovens as provided in Section 1809.7, or

(4) Visible emissions result solely from fugitive emissions excepted from the provisions of Section 1809.2, or

(5) Visible emissions result from the operation of an incinerator, as provided in Section 1809.5, or

(6) Visible emissions result from the cold start of fuel-burning or combustion equipment and when notice has been given as provided in Section 1816....

Section 1809.2, regarding fugitive emissions reads in pertinent part as follows:

.2 Fugitive Emissions

A. No person shall cause, suffer, or allow the emission into the open air of any fugitive air contaminant from any source except from:

(1) Construction or demolition of buildings or structures

(2) Grading, paving, and maintenance of roads and streets

(3) Use of roads and streets. Emissions from material in or on trucks, railroad cars, and other vehicular equipment shall not be considered as emissions from use of roads and streets.

(4) Clearing of land

(5) Tilling or applying amendments to the soil, preparing cover crops for incorporation into the soil and harvesting, while farming

(6) Stockpiling of materials

(7) Blasting in open pit mines. Emissions from drilling shall not be considered as emissions from blasting.

(8) Sources for which specific emission standards or standards of performance are set forth in this Article

(9) Other sources and classes of sources determined by the Director to be of minor significance with respect to causing air pollution....



1809.7 Coke Ovens

A. No person shall cause, suffer, or allow the emission into the open air of visible air contaminants from the pushing and charging of a battery of coke ovens in such a manner that the opacity of the emissions is equal to or greater than No. 2 on the Ringelmann Scale or equivalent opacity.

B. No persons shall cause, suffer, or allow the emission into the open air of visible air contaminants from the pushing and charging of a battery of coke ovens after January 1, 1974 in such a manner that the opacity of the emissions is equal to or greater than No. 1 on the Ringelmann Scale or equivalent opacity.

C. No person shall cause, suffer, or allow the emission of any visible air contaminants into the open air from any opening on the top side of a battery of coke ovens, except for periods when a battery of coke ovens is being charged.

D. No person shall cause, suffer or allow any visible emission except non-smoking flame, from any opening from more than ten (10) percent of the coke ovens in any battery at any time except as provided in the preceding paragraph.

E. Self-sealing oven doors found to be leaking thirty (30) minutes or more after an oven is charged shall be adjusted, repaired, or replaced prior to the next coking cycle which starts during the daylight turn after the leak is discovered. Leaking luted doors shall be reluted immediately.

F. No person shall cause, suffer, or allow the operation of a coke quenching tower which is not equipped with interior baffles.

G. No person shall cause, suffer, or allow the quenching of coke where the water used for such quenching is not equivalent to the quality of water established for the nearest stream or river by regulations of the Department of Environmental Resources, promulgated under the provisions of The Pennsylvania Clean Streams Law, Act of June 22, 1937, P.L. 1987; as amended May 8, 1945, P.L. 435; August 23, 1965, P.L. 372; and July 21, 1970, P.L. 222, except that water from the nearest stream or river may be used for the quenching of coke.

Pursuant to Section 12 of the Pennsylvania Air Pollution Control Act (35 P.S. §4012), the provisions of Article XVIII were legally authorized, as regulations



promulgated by an approved air pollution control agency of a political sub-division, provided, however, that the regulations:

...will not be less stringent than the provisions of this act or the rules and regulations promulgated pursuant to its provisions. (Emphasis added).

If §123.1 of the Department's regulations had been interpreted as prohibiting all fugitive emissions from coke oven batteries, the Department could not have approved Subsection 1809.7 of Article XVIII. Similarly, had EPA so interpreted §123.1, it could not have legally approved Article XVIII, given its awareness of the language of Section 12 of the Act. Precisely because the control strategy for fugitive coke oven emissions was recognized as based on allowable opacity levels (Cf. Bethlehem, Alan Wood consent agreements), no objection to the promulgation of Article XVIII was voiced by either the Department or the EPA.

The record indicates that EPA did not require a separate air quality demonstration in support of Article XVIII, which suggests that EPA, at the time, was convinced that the Allegheny County standards, including §1809.7, were at least as stringent as the State SIP EPA had approved in March, 1972. It is clear the State was of this opinion. In a letter to Regional Administrator Furia, dated June 20, 1972<sup>23</sup> Mr. Sussman requested that:

...the new Allegheny County regulations...be considered a part of the applicable control strategy in the area. Further control strategy evaluations are not necessary, since the Allegheny County regulations are at least as stringent as State regulations."

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23. A copy of this letter is attached as Appendix A-v.

The Allegheny County regulations contained in Article XVIII were approved by the Administrator as part of the Pennsylvania SIP.<sup>24</sup> To legally approve Article XVIII as it did, EPA had to accept, as not less stringent than the regulations promulgated by the Department, a regulatory approach to control of coke oven fugitive emissions framed in terms of allowable visible emissions applicable to distinct points of fugitive emissions from the coke oven battery.

#### A.2.c Clairton Consent Decree—SIP Revision

The regulatory strategy of the Commonwealth was again set forth in the submission of the "Proposed Revisions to the Metropolitan Pittsburgh Intrastate Air Quality Control Region Implementation Plan" by Governor Shapp on December 14, 1972. In that document, the County and the Department undertook to demonstrate to EPA that the attainment of the primary annual NAAQS for particulate matter would not be jeopardized by approving the consent decree reached on September 25, 1972<sup>25</sup> among the County, the Department, and U.S. Steel Corporation, which contained interim standards less stringent than the requirements of Article XVIII, Section 1809.7.<sup>26</sup> After reviewing the original SIP submission and noting the discrepancy between the emissions inventory figures stated in Tables 2.1 and 2.2 of the Control Strategy Evaluation and the figures used in "Appendix B" of the 1972 SIP submission, the revision document undertook to re-examine the matter by quantifying the allowable fugitive emissions from by-product coke oven batteries and calculating the resultant air quality level expected in light of

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24. 40 C.F.R. §§52.2020(c)(4), 52.2023.

25. Separate agreements covering, inter alia, coke oven desulfurization and coke quenching were signed in October, 1972.

26. The consent agreement was reached among the parties in settlement of a lawsuit jointly filed by the county and the Department on February 11, 1972.

the developed Pennsylvania control strategy for fugitive emissions from coke ovens as reflected by:

- "a) the provisions of Article XVIII (Sections 1809.1A, 1809.7) relating to coke oven emissions;
- b) the less stringent interim requirements contained in the Clairton consent decree; and
- c) the Commonwealth's coke oven standard--patterned after the Bethlehem and Alan Wood consent orders."<sup>27</sup>

The assumptions used in the revision document's calculations are stated on Page 5:

"The following two calculations reconsider this problem based on compliance of southwestern Pennsylvania coke plants with Article XVIII or the standards in the Clairton Consent Decree in Allegheny County and the following coke plant standard beyond Allegheny County, both of which are almost identical.

"There shall be no visible emissions other than water mist or vapor in excess of Ringelmann No. 1 or twenty (20) percent equivalent opacity for a period or periods aggregating more than three (3) minutes of any consecutive sixty (60) minutes and not in excess of sixty (60) percent equivalent opacity at any time from the operation of any battery of by-product coke ovens.

This latter standard summarizes the Commonwealth policy on coke plant compliance in the jurisdiction of the Department of Environmental Resources."

Pages 6-11 of the revision document present the calculations of the Department and the County, based on use of the above as the applicable emissions standards. The calculations demonstrated that projected air quality would be  $72 \text{ ug/m}^3$  (p. 10) which would result in attainment of the primary annual NAAQS for particulate matter of  $75 \text{ ug/m}^3$ . Quite expectedly, by quantifying the reduction in mass emissions

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27. Revision document, pages 6-7.



expected from enforcement of the control strategy for fugitive emissions from coke oven batteries as explicitly described in the revision document, the projected air quality fell between the levels of  $69.8 \text{ ug/m}^3$  and  $76 \text{ ug/m}^3$  given in the original SIP submission reflecting total and no control of coke oven fugitive emissions respectively. The Clairton consent decree, supported by the revision document, was approved by EPA as a revision to the Pennsylvania SIP.<sup>28</sup>

It is important to recognize that the Clairton revision was presented to EPA less than a year after the Agency's approval of the 1972 SIP submission and approximately six months after the Department's submission of Article XVIII containing Allegheny County's revised regulations limiting air contaminant emissions. Most of the principals familiar with both earlier submissions were still with the Agency. It is therefore hardly surprising that the explicit statement in the revision document of the standards previously recognized as applicable to fugitive emissions from coke ovens evinced no negative response from EPA.

#### A.2.d Subsequent enforcement actions applying the standard

Subsequent to the clarification of the control strategy for coke oven fugitive emissions in the Clairton revision document, and EPA's approval as a SIP revision, the Department, in May, 1973, filed a complaint in equity against U.S. Steel Corporation's Fairless Works. The final relief requested of the Court with respect to emissions from the coke oven batteries was as follows:

C. After final hearing permanently direct USS, its agents, servants, employees, successors and assigns on or before July 1, 1975, to operate its coke ovens at the Fairless Works in compliance with the following standards:

There shall be no visible emissions other than water mist or vapor in excess of #1 Ringelmann or twenty (20%) per-

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28. 40 C.F.R. §52.2036.

cent equivalent opacity for a period or periods aggregating more than three (3) minutes of any consecutive sixty (60) minutes from the operation of any battery of by-product coke ovens.<sup>29</sup>

The complaint also requested that the Court order compliance with specific interim standards, all of which were expressed in terms of allowable opacity.<sup>30</sup>

On June 1, 1973, the Department and Interlake, Inc. (now Koppers, Erie, Pa.) entered a consent agreement which provided, in Paragraph 2 for interim standards--

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29. This final standard was identical to the final standard contained in the Bethlehem (2/5/72) and Alan Wood (6/1/72) consent orders.

30. B. After final hearing, directing USS, its agents, servants, employees, successors, and assigns to comply with the following interim emission standards for its coke ovens until July 1, 1975:

1. Charging - There shall be no visible emissions during the charging cycle from the charging holes or the larry car of any battery with an opacity which is equal to or greater than twenty percent (20%) (equivalent to Ringelmann No. 1) for a period or periods aggregating more than four (4) minutes of any consecutive sixty (60) minutes on each battery oven or equal to or greater than an opacity of sixty percent (60%) (equivalent to Ringelmann No. 3) at any time. For purposes of this Decree, the charging cycle shall begin when the first coke oven lid is removed and shall end when the last lid is replaced.

2. Pushing - There shall be no visible emissions during the pushing cycle, other than water mist or vapor, with an opacity which is equal to or greater than forty percent (40%) (equivalent to Ringelmann No. 2), for more than one (1) push per hour per pushing machine, or for two (2) consecutive pushes from the same oven. For purposes of this Decree, the pushing cycle shall begin when the coke oven door is removed and shall end when it is replaced.

3. Combustion Stacks - There shall be no visible emissions, other than water mist or vapor, with an opacity which is equal to or greater than Ringelmann No. 1 for a period or periods aggregating more than three (3) minutes of any consecutive sixty (60) minutes or equal to or greater than Ringelmann No. 3 at any time from any stack, except as permitted by paragraph A-2 above.



based on opacity levels--and provided that, no later than July 1, 1975, emissions from the coke oven batteries be in compliance with the following final standard.<sup>31</sup>

5. No later than July 1, 1975, Interlake, Inc., its successors and assigns, shall have achieved the following performance standard:

There shall be no visible emission other than water mist or vapor with an opacity which is equal to or greater than Ringelmann No. 1 or 20% equivalent opacity for a period or periods aggregating more than three (3) minutes in any consecutive sixty (60) minutes at any time from the operation of its by-products coke ovens.

In September, 1973, unilateral Department orders were sent out to the three remaining steel companies within the Department's jurisdiction--Crucible, Wheeling-Pittsburgh, and Jones & Laughlin (Aliquippa Works). These orders,<sup>32</sup> all of which were appealed, required compliance with the following final standard:

"4. No later than July 1, 1977, the implementation of the plan submitted pursuant to paragraph 3 shall have achieved the following performance standard:

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(continued)

30. 4. Oven Doors - There shall be no visible emissions, other than water mist or vapor, with an opacity which is equal to or greater than an opacity of twenty percent (20%) (equivalent to Ringelmann No. 1) at any time, except as permitted by paragraph A-4 hereof.

5. Topside Emissions - Any leak discovered on the top side of a battery shall be immediately wet sealed or the oven shall not be recharged until the necessary repairs are made. At no time shall there be leaks in more than five percent (5%) of the offtake piping on any one battery.

31. A copy of the Interlake consent agreement is attached as Appendix A-vi.

32. All three orders were substantively identical. The Crucible order is attached as Appendix A-vii.



There shall be no visible emission other than water mist or vapor in excess of #1 Ringelmann or 20% equivalent opacity for a period or periods aggregating more than three (3) minutes of any consecutive sixty (60) minutes or equal or greater than #3 Ringelmann or 60% equivalent opacity at any time from the operation of any battery of by-product coke ovens."

By September, 1973, therefore, the Department was either engaged in litigation to enforce a final compliance standard for fugitive emissions from coke oven batteries expressed as allowable opacity or had entered consent agreements in which the company had agreed to meet such a final standard.

A.2.e Bethlehem Steel Corporation--EPA actions RE Johnstown, Bethlehem plants

Further demonstration in the record that EPA, subsequent to its approvals of Article XVIII for Allegheny County and the Clairton SIP revision, understood and interpreted the Implementation Plan as regulating fugitive emissions from coke ovens by prohibiting them from exceeding a specific opacity level for a finite portion of a sixty minute period, is evident by its actions regarding Bethlehem Steel Corporation's proposed compliance program in 1974 for its Johnstown plant and its §113 Order issued in January, 1976 for the Bethlehem, Pa. plant.

In 1974, officials from Bethlehem Steel Corporation announced that due to market conditions the company had revised its corporate planning strategy and had decided to retain operations at the Johnstown plant. The company therefore sought to open negotiations with both the Department and EPA to reach consent agreements providing for compliance with all applicable emission limitations for all sources at the Johnstown plant. After numerous discussions with the company throughout most of 1974, EPA, by letter of Stephen R. Wassersug, Director, Enforcement Division, US EPA Region III, transmitted to Bethlehem a series of draft orders.

Mr. Wassersug's letter indicated that draft order No. 5 provided for comprehensive treatment of all sources at the Johnstown plant.

"Again, it is hoped that the Company will be able to sign the 5th draft as written and thus formally consent to meet its May 1974 oral commitment to bring all of the air pollution emissions at the Johnstown Plant in full compliance with the applicable provisions of the Pennsylvania implementation plan by the end of 1978. Please understand that this office intends to take all necessary steps to attain full compliance with the implementation plan as expeditiously as practicable." (Emphasis added)

The final compliance standard specified by EPA in draft order No. 5 for the Johnstown coke oven batteries was as follows:

"8(a) On and after the dates specified below, there shall be no visible emissions other than water mist or vapor in excess of No. 1 Ringelmann or 20% equivalent opacity for a period or periods aggregating more than 3 minutes of any consecutive 60 minutes from the operations of any battery of by-product coke ovens..."

Interim standards for the coke oven batteries, as established in Paragraph 10, limited emissions from oven doors, charging, and pushing operations to designated opacity levels.<sup>33</sup> On the basis of the statements made by Mr. Wassersug in his letter of November 1, 1974 and the provisions of Draft Order No. 5—which EPA had prepared—it is clear that EPA had accepted the Department's control strategy as expressed in the Clairton revision document and was prepared to enforce such standard as the applicable SIP requirement in its own actions against Pennsylvania coke plant operators.

On January 27, 1976, EPA, by letter from Daniel J. Snyder, III, Region III Administrator advised Bethlehem Steel Corporation pursuant to Section 113 of

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33. Copies of the November 1, 1974 letter from Wassersug, and draft order #5 are attached as Appendix A-viii. Note that on page 2, Conclusions of Law, EPA concluded that operation of the specified air pollution sources at Johnstown, including the Rosedale and Franklin coke oven works, violated "Sections 123.1, 123.13, 123.23 and 123.4."



the Clean Air Act of violations of "the federally-approved implementation plan for the Commonwealth of Pennsylvania" at the company's Bethlehem, Pa. plant. Of the numerous violations documented at the coke oven batteries, all were based on observed violation of opacity standards. On December 27, 1976 the Department received a copy of a draft Section 113 Order for the Bethlehem plant dated December 20, 1976 from Richard Watman, Air Compliance Branch, Region III. That draft required the company, in Paragraph 3, to:

"3. Control emissions from the various operations of the Company's By-Product Coke Oven Batteries so that these operations do not produce visible emissions, individually or collectively, with opacities greater than or equal to twenty percent ( $\geq 20\%$ ) for more than three (3) minutes in any one hour observation period, or visible emissions with opacities greater than or equal to sixty Percent ( $\geq 60\%$ ) at any time."

The Department notes that, pursuant to the provisions of Section 113 of the Clean Air Act then in force, EPA could not legally have prepared or ultimately issued the proposed Section 113 Order had §123.1, viewed as an absolute prohibition of fugitive coke oven emissions, been considered as the SIP requirement with respect to coke ovens.<sup>34</sup>

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34. Copies of the §113 Notice and draft Order are attached as Appendix A-ix. The Department, in accordance with §113(a)(4) received a copy of a draft of the proposed §113 Order from Mr. Watman on October 12, 1976. The provisions of Paragraph 3 of this October draft were identical to those in the December, 1976 Order sent the company. It should be noted that the Department, in a letter dated November 9, 1976 to Mr. Watman from Robert E. Yuhnke, Assistant Attorney General, indicated that the only substantive deficiency it found in the draft was the "failure to include an interim standard for charging..." Since the final compliance standard in Paragraph 3 was consistent with the Department's standard for fugitive coke oven emissions the Department found further comment unnecessary.



### A.3. SUMMARY

The Department submits that the foregoing discussion demonstrates that the Commonwealth control strategy for fugitive emissions from by-product coke ovens was never expressed or applied, through §123.1, as a total prohibition of these emissions. The 1972 SIP submission is at best unclear--EPA was provided with two control strategies and two air quality calculations, both of which demonstrated that whether coke oven fugitive emissions were completely controlled (i.e. zero) or remained uncontrolled, the NAAQS primary annual standard for particulate matter would be met. The uncertainty as to approach in the 1972 SIP submission can be ascribed to the fact, as Mr. Sussman explained during the public hearings, that the Department was still in the process of negotiating with the steel companies and attempting to formulate an emission limitation which recognized the unique status of coke oven emissions.

The Commonwealth's control strategy for regulating the fugitive emissions from coke ovens through reference to permitted opacity levels, was first formally expressed in the Bethlehem and Alan Wood consent orders. It was reflected in the Department's approval and submission to EPA of Allegheny County's Article XVIII. Quantification of fugitive emissions allowed under this control strategy, and calculation of estimated air quality levels were provided EPA in connection with the Clairton revision on a mass emission (pounds/hr) basis. The control strategy as developed was subsequently applied by EPA on at least two occasions: during the course of its 1974 negotiations with Bethlehem Steel; and its 1976 Section 113 actions concerning the company's Bethlehem, Pa. facility.

Based upon the previous discussion, the Department submits that the record demonstrates that the applicable compliance standard for fugitive emissions from coke oven batteries was one based on the opacity of those emissions. This is reflected in the final compliance standard contained in the various consent

agreements, unilateral Department orders and Fairless equity action as well as in the EPA draft orders for Bethlehem Steel Corporation. In the demonstration which follows in Part B, the Department has utilized this final compliance standard for purposes of illustrating that the new coke oven regulations are more stringent than the former requirements.

B. AIR QUALITY DEMONSTRATION--PROPOSED REVISION VS. FORMER REGULATIONS

B.1. Example Calculation of Allowed Particulate Emission Rate From a Coke Battery Under The New Pennsylvania Coke Oven Regulations

The following calculation demonstrates what the emission rates would be under the new coke oven regulations in Pennsylvania. This example calculation assumes the following:

Coal/Coke Characteristics

wet coal charging  
gross coking time-17 hours  
17 tons coal per charge  
12 tons coke per push  
wet quenching

Battery Characteristics

height: 4 meters  
double collection mains  
number of ovens: 60 (120 doors)  
4 charging ports per oven

Operating Characteristics

average charging time: 3 minutes  
average pushing time: 2 minutes

From the above assumptions there will be an average of 3.5 ovens charged and pushed per hour. The worst case for this example battery will therefore assume 4 ovens charged and pushed during one hour. During the hour under consideration, the tonnage of coal charged and coke pushed can be calculated as follows:

$$\frac{4 \text{ ovens charged}}{\text{hour}} \times \frac{17 \text{ tons coal}}{\text{charge}} = 68 \text{ tons coal charged/hour} \quad , \text{ and} \quad (1.1)$$

$$\frac{4 \text{ pushes}}{\text{hour}} \times \frac{12 \text{ tons coke}}{\text{push}} = 48 \text{ tons coke pushed/hour.} \quad (1.2)$$

B.1.a Allowed Emission Rates at Each Major Emission Point

B.1.a.1 Charging Emissions

Under the new Pennsylvania regulations, Chapter 123, §123.44(a)(1)(i) limits the aggregated times of visible open charging emissions for four consecutive charges to not more than 75 seconds. Although the standard requires good stage or sequential



charging practices,\* the regulation allows 75 seconds during the hour of any emissions including uncontrolled charging emissions.\*\* Using the uncontrolled mass emission rate for coke oven charging, of 1 pound per ton of coal charged the emission rate which would occur for 75 seconds would be:

$$\frac{1 \text{ pound}}{\text{ton coal}} \times \frac{68 \text{ tons coal}}{\text{hour}} \times \frac{\text{hour}}{4 \text{ charges}} \times \frac{\text{charge}}{3 \text{ minutes}} \times \frac{\text{minute}}{60 \text{ seconds}} = \frac{0.094 \text{ lbs.}}{\text{particulate/sec.}} \quad (1.3)$$

, or

$$\frac{0.094 \text{ lbs. particulate}}{\text{second}} \times \frac{75 \text{ seconds}}{\text{hour}} = 7.1 \text{ lbs. particulate/hour.} \quad (1.4)$$

Whereas estimates of "uncontrolled" charging emissions range from 0.8 to 10 pounds per ton of coal,<sup>(1,2,3)</sup> the estimates of 1 pound per ton used in this calculation is considered to be a high value for an operation which is generally complying with the 75 second standard. The value of 1 pound per ton of coal is considered high because a value of 0.82 pounds per ton of coal was measured at Bethlehem Steel Corporation's Burns Harbor Works from a larry car scrubber controlling off-the-main charging where visible uncontrolled emissions exceeded 75 seconds for four consecutive charges.

#### B.1.a.2 Pushing Emissions

Under the new Pennsylvania regulations the pushing operation is regulated by Chapter 129, §129.15(a), (b), (c) and (e). These regulations require that:

- (a) the pushing operation be enclosed and pushing emissions be contained,

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\* It is also possible that compliance with the standard would be achieved through use of a larry car scrubber.

\*\* The definition of uncontrolled charging emissions used here is that the oven is charged on-the-main, but that for some reason—failure of procedure, improper coal blen, improper larry car volumetric setting, insufficient offtake cleanliness, or other technical factor—a given charge is not completely controlled.

- (b) best available technology be installed,
- (c) visible fugitive air contaminants from any air cleaning device controlling pushing emissions not exceed 20% opacity, and
- (e) visible fugitive air contaminants not exceed 10% opacity during transport.

B.1.a.2.i Stack Emissions Allowed

The mass emission rate from the control system is limited by Chapter 123, §123.13(b). Using the process factor of 1 pound per ton of coke pushed given in §123.13(b), the allowable hourly emission rate expressed in pounds for four (4) pushes totaling 48 tons of coke can be determined with the following equation:

$$A = 0.76E^{0.42}$$

$$A = 0.76(FXW)^{0.42}$$

$$A = 0.76(1 \times 48)^{0.42}$$

$$A = 3.86 \text{ pounds/hour}$$

(1.5)

Section 123.13(b) however, allows the greater of the allowable calculated through use of the process factor, or that calculated using 0.02 grains per dry standard cubic foot. Three types of pushing controls generally used are: enclosed quench cars, traveling hoods, and coke side sheds. In order to properly consider the impact of the 0.02 grains per dry standard cubic foot alternative allowable mass standard, two control systems will be considered—a low flow rate enclosed quench car and a high flow rate coke side shed. In the first case the exhaust volume will be considered to be 25,000 dry standard cubic feet per minute. (This is assumed to be, conservatively, the flow rate during coke fall and coke travel.) The allowable emission rate can be determined by using the following expression:

$$A = \frac{0.02 \text{ grains}}{\text{DSCF}} \times \frac{25,000 \text{ DSCF}}{\text{minute}} \times \frac{2 \text{ minutes}}{\text{push}} \times \frac{4 \text{ pushes}}{\text{hour}} \times \frac{\text{pounds}}{7000 \text{ grains}}$$

$$A = 0.59 \text{ pounds/hour}$$

(1.6)

If a shed were used, and assuming an exhaust volume of 200,000 dry standard cubic feet per minute, the allowable emission rate would be:

$$A = \frac{0.02 \text{ grains}}{\text{DSCF}} \times \frac{200,000 \text{ DSCF}}{\text{minute}} \times \frac{2 \text{ minutes}}{\text{push}} \times \frac{4 \text{ pushes}}{\text{hour}} \times \frac{\text{pound}}{7000 \text{ grains}}$$

$$A = 4.6 \text{ pounds/hour}$$

(1.7)

#### B.1.a.2.ii Fugitive Emissions Allowed

The Department recognizes that a certain amount of fugitive emissions from an enclosed pushing operation may occur, and this was acknowledged by the adoption of §129.15(c) which allows fugitive emissions not exceeding 20% opacity. It is the Department's judgment that this requirement is equivalent to requiring enclosed pushing systems to have a minimum capture efficiency of between 90 and 95 percent.\*

Based on an emission factor of 2 pounds per ton of coal charged for pushing emissions, <sup>(4)</sup> and 95% capture efficiency the potential fugitive emissions would be:

$$\frac{68 \text{ tons coal charged}}{\text{hour}} \times \frac{2 \text{ pounds}}{\text{ton coal charged}} \times \frac{(100-95)}{100} = 6.8 \text{ pounds/hour} \quad (1.8)$$

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\* The Environmental Protection Agency has designated 90% capture efficiency as equivalent to "lowest achievable emission rate" in certain applications (its settlement with U.S. Steel, Fairfield Works, Coke Battery #9, April 1978. Alabama Air Pollution Control Commission and the state of Alabama ex rel. William J. Baxley, Attorney General and Jefferson County Board of Health, Plaintiffs and United States of America and Administrator of United States Environmental Protection Agency, Intervenor Plaintiff v. United States Steel Corporation, a Corporation, Defendant. Civil Action No. 77-H-1630-S. Whereas it has designated 20% opacity as an upper limit for such fugitive pushing emissions in other LAER cases (U.S. Steel, Clairton Works, Battery 20). EPA published a list of "BACT" standards for coke ovens (memoranda of January 5, 1977 from Assistant Administrator of Enforcement Legro to EPA's Regional Enforcement Directors) which asserted BACT capture efficiency to be 90%. Observations by DER personnel at Bethlehem Steel Corp. Bethlehem Plant on January 16, 1978 indicated that capture efficiencies achieved in practice appeared to be in excess of 95%.



B.1.a.2.iii Total Pushing Emissions Allowed

Table 1.1  
Tabulated Pushing Emissions  
pounds/hour

	Process Factor Standard	.02 Grain/DSCF Standard	Fugitive	Total
Car	3.9	0.6	6.8	10.7
Shed	3.9	4.6	6.8	11.4

The overall conclusion from this analysis is that the new Pennsylvania coke oven regulations require control of pushing emissions and about 11.0 pounds per hour for the example coke battery.

B.1.a.3 Door Emissions

The new Pennsylvania regulations (§123.44(a)(3)) require that there be no visible emissions from more than 10% of the door areas (two doors per oven) of operating coke ovens, excluding two door areas representing the last oven charged on any battery and any door areas obstructed from view. Also, door area emissions from any coke oven must not exceed 40% opacity 15 minutes or more after the last charge to that oven (123.44(a)(2)). For the example battery under this standard the maximum number of door areas permitted to leak, assuming no door areas obstructed from view, would be:

$$[120 \text{ doors} \times \frac{10}{100}] + 2 = 14 \text{ doors.}$$

(1.9)

The allowed aggregate particulate emission rate for the example battery would then be:

$$14 \text{ doors} \times \frac{0.6 \text{ pounds}^*}{\text{hour-door}} = 8.4 \text{ pounds/hour.} \quad (1.10)$$

Assuming a shed were used to capture pushing emissions one-half of the door emissions would be captured thus reducing particulate emissions from doors to approximately 4.6 pounds per hour (assuming a 90% efficient control system  $4.2 + [\frac{100-90}{100}] \times 4.2$ ).

#### B.1.a.4 Topside Emissions

With respect to the new coke oven regulations (§123.44(a)(4)-(7)) topside emissions would include emissions from charging ports, offtake piping, any other points on the topside and the coke oven gas collector mains. Emissions would be allowed (§123.44(a)(4)) from 2% of the charging ports, or from:

$$60 \text{ ovens} \times \frac{4 \text{ charging ports}}{\text{oven}} \times \frac{2(\% \text{ allowable})}{100} = 4 \text{ charging ports.} \quad (1.11)$$

Emissions would also be allowed (§123.44(a)(5)) from 5% of the offtake piping, or from:

$$60 \text{ ovens} \times \frac{2 \text{ offtakes}}{\text{oven}} \times \frac{5(\% \text{ allowable})}{100} = 6 \text{ offtakes.} \quad (1.12)$$

- 
- \* Tests conducted by Bethlehem Steel Corp. at Burns Harbor on experimental door hoods on ovens on the pusher side of Battery #2 in May 1975 showed an average mass emission rate of 66 grains per minute per door for lightly leaking doors in the first hour after charging, which is equivalent to:

$$\frac{66 \text{ grains}}{\text{minute-door}} \times \frac{60 \text{ minutes}}{\text{hour}} \times \frac{\text{pound}}{7000 \text{ grains}} = \frac{0.6 \text{ pounds}}{\text{hour-leaking door}}$$

This information derives from a conversation with Bernard Bloom and from a conference held by EPA (B. Bloom, A. Trenholm and R. Fallero), Pennsylvania DER and Bethlehem Steel (Carl Symons, Joe Kunz, Robert McMillan, and David Anderson) February 10, 1977, Bethlehem, Pennsylvania. Also, U.S. Steel Corp., Clairton Works, in a response to a §114 letter to Region III, said that during a test of its Clairton Battery #17 shed the door emissions were 0.18 pounds per ton of coal. Since this coke battery has a coal throughput of 56 tons per hour, the emission rate from doors was 10 pounds per hour. Since approximately 35% of the doors on the average were observed leaking on Battery #17 by Allegheny County inspectors during the period of testing (third quarter 1975), the average door leak rate was:

$$\frac{10 \text{ pounds}}{\text{hour}} \times \frac{1}{.35 \times 61 \text{ doors}} = 0.5 \text{ pounds/hour/leaking door}$$

The new regulations allow no emissions from other points on the topside (§123.44 (a) (6)) or from the coke oven gas collection mains (§123.44(a) (7)).

Actual emission rates from topside leaks are hard to quantify since there have never been quantitative tests. However, from comparative visible observations of coke oven doors, charging ports and offtakes at well controlled coke plants, it is the DER's judgment that a reasonable upper bound for any leak on the topside is a quantity no greater than the door leak rate of 0.6 pounds per hour per leaking door under the 10% door standards. One-third of this rate or 0.2 pounds per hour per leaking topside point is estimated to be the lower bound. Therefore, since there are 10 points on the topside permitted to leak, ie. 4 charging ports and 6 offtakes, topside emissions are estimated to be:

$$10 \text{ topside leaks} \times \frac{0.6 \text{ pounds}}{\text{hour-leak}} = 6 \text{ pounds/hour (upper limit), and} \quad (1.13)$$

$$10 \text{ topside leaks} \times \frac{0.2 \text{ pounds}}{\text{hour-leak}} = 2 \text{ pounds/hour (lower limit).} \quad (1.14)$$

#### B.1.a.5 Summary

Allowable particulate matter emissions are summarized in Table 1.2 below:

Table 1.2

<u>Type of Emissions</u>	<u>Emission Rate (pounds/hour)</u>
Charging	7.1
Pushing	10.7 - 11.4
Doors	4.6 - 8.4
Topside	<u>2.0 - 6.0</u>
Total	24.4 - 32.9



References to Section B.1

1. Trenholm, A. R. Standards Support and Environmental Impact Statement: An Investigation of the Best Systems of Emission Reduction for the Charging Operation and Topside Leaks on By-Product Coke Ovens, U.S. Environmental Protection Agency, Draft, p. 3-25 (July 1975).
2. Compilation of Air Pollutant Emission Factors, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, N.C., Publication AP-42, Second Edition with Supplements 1-5, p. 7.2-2 (February 1976).
3. Technical Guidance for Control of Industrial Process Fugitive Particulate Emission, Prepared by PEDCo Environmental, Inc., Cincinnati, Ohio, for U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, N.C., EPA-450/3-77-010, p. 2-55 (March 1977).
4. Draft Report On Emission Testing and Evaluation of Ford/Koppers Smokeless Coke Pushing System, prepared by Clayton Environmental Consultants, Inc. for the U.S. Environmental Protection Agency, Contract No. 68-02-0630, Volume 1, Table 8.0-1 (May 5, 1976).

B.2. Example Calculation of Allowed Particulate Emission Rate From a Coke Battery Under The Former Pennsylvania Coke Oven Requirements

Under the existing State Implementation Plan Pennsylvania has interpreted its regulations from August 1971 until December 31, 1977, as prohibiting coke batteries from emitting visible air contaminants in such a manner that the opacity of the emission is equal to or exceeds 20% for a period or periods aggregating more than 3 minutes in any one hour, or is equal to or greater than 60% at any time.\* Using the same example battery and assumptions set forth in Section B.1, the allowable mass emission estimates allowed under the former Pennsylvania requirements are analyzed below for each of the emission points analyzed in Section B.1.

B.2.a Allowed Emission Rates at Each Major Emission Point

B.2.a.1 Charging Emissions

Under the former requirements visible particulate emissions were allowed for the entire three (3) minute charge of each oven, if the opacity remained less than 20%. Emissions, however, were never allowed to equal or exceed 60% opacity at any time. Such a standard demanded excellent charging practice\*\* because of the 60% opacity standard. DER and EPA technical staff believe that such charging practice on any single charge as compared to uncontrolled charging as defined in Section B.1.a.1 has to be at least 99% efficient.<sup>(1)</sup> The following analysis, however, only assumes 95% efficiency. Therefore, under DER's former requirements allowed charging emissions would be:

$$\frac{1 \text{ pound particulate}}{\text{ton coal charged}} \times \begin{matrix} (2, 3, 4) \\ x \end{matrix} \frac{68 \text{ tons coal}}{\text{hour}} \times \frac{(100-95)}{100} = \frac{3.40 \text{ pounds}}{\text{particulate/hour}} \quad (2.1)$$

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\* Discussion of the development of the Commonwealth's control strategy appears in Part A, supra, of this document.

\*\* See footnote (\*) on page 26.

#### B.2.a.2 Pushing Emissions

Under the former requirements pushing emissions were not permitted to equal or exceed 60% opacity at any time. Due to this requirement pushing emissions had to be contained and controlled. These emissions were subject to the grain loading limitations contained in Chapter 123, §123.13(c) once contained and controlled. This requirement limits the concentration of particulate matter in the effluent gas, at any time, to 0.04 grains per dry standard cubic foot, when the effluent gas volume is less than 150,000 dry standard cubic feet per minute, and to the rate determined by the formula:  $A = \frac{6000}{E}$ , where A equals the allowable emissions in grains per dry standard cubic feet and E equals the effluent gas volume in dry standard cubic feet per minute, when E is equal to or greater than 150,000 but less than 300,000.

##### B.2.a.2.i Stack Emissions Allowed

Three types of systems--enclosed quench cars, traveling hoods, and coke side sheds--are generally used for capturing pushing emissions. Two systems--a low flow rate enclosed quench car and a high flow rate coke side shed--will be considered to determine the impact of the applicable grain loading standard.

Considering the effluent gas volume from the car to be 25,000 dry standard cubic feet per minute, the allowable emission rate can be determined by using the following expression:

$$A = \frac{0.04 \text{ grains}}{\text{DSCF}} \times \frac{25,000 \text{ DSCF}}{\text{minute}} \times \frac{2 \text{ minutes}}{\text{push}} \times \frac{4 \text{ pushes}}{\text{hour}} \times \frac{\text{pound}}{7000 \text{ grains}}$$

$$A = 1.1 \text{ pounds/hour.}$$

(2.2)

Considering a shed with an effluent gas volume of 200,000 dry standard cubic feet per minute, the applicable standard would be 0.03 grains per dry standard cubic feet, and the allowable emission rate would be:



$$A = \frac{0.03 \text{ grains}}{\text{DSCF}} \times \frac{200,000 \text{ DSCF}}{\text{minute}} \times \frac{2 \text{ minutes}}{\text{push}} \times \frac{4 \text{ pushes}}{\text{hour}} \times \frac{\text{pound}}{7000 \text{ grains}}$$

$$A = 6.9 \text{ pounds/hour.}$$

(2.3)

#### B.2.a.2.ii Fugitive Emissions Allowed

The same discussion follows regarding fugitive emissions from the pushing operation as was presented in Section B.1.a.2. Recognizing that a certain amount of fugitive emissions from an enclosed pushing operation may occur, it is the Department's judgment that enclosed pushing systems have a captive efficiency of between 90 and 95 percent.\*

Based upon an emission factor of 2 pounds per ton of coal charged for pushing emissions,<sup>(5)</sup> and 95% captive efficiency the potential uncaptured fugitive emissions would be:

$$\frac{68 \text{ tons coal charged}}{\text{hour}} \times \frac{2 \text{ pounds}}{\text{ton coal charged}} \times \frac{(100-95)}{100} = 6.8 \text{ pounds/hour}$$

(2.4)

#### B.2.a.2.iii Total Pushing Emissions Allowed

Table 2.1

Tabulated Pushing Emissions

pounds/hour

	<u>Applicable Grain Loading Allowable</u>	<u>Fugitive</u>	<u>Total</u>
Car	1.1	6.8	7.9
Shed	6.9	6.8	13.7

This analyses indicates that pushing emissions under the former requirements would range between 7.9 and 13.7 pounds per hour for the example battery.

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\* See footnote on page 28 in Section B.1.a.2 for further clarification.

#### B.2.a.3 Door Emissions

Although it is recognized that the former requirements allowed all coke oven doors to leak at a rate not to equal or exceed 20 percent opacity, realistically all doors would not be leaking at the same time. Assuming all doors stop leaking within the first 13 hours, and using the 0.6 pounds per hour per leaking door emission rate discussed in Section B.1.a.3, the maximum door emission rate allowed by the former requirements is calculated by the following expression:

$$\frac{13 \text{ hours}}{17 \text{ hours}} \times 120 \text{ doors} \times \frac{0.6 \text{ pounds}}{\text{hour-leaking door}} = 55.2 \text{ pounds/hour} \quad (2.5)$$

#### B.2.a.4 Topside Emissions

Emissions from all points on the topside, including the collector mains, were permitted to leak up to 20% opacity under the former requirements. As in the previous door emission analysis topside leaks do not occur for the entire coking cycle. As stated in Section B.1.a.4 actual emission rates from topside leaks have never been quantitatively tested, but DER estimates that a reasonable upper bound for any leak on the topside is a quantity no greater than the door leak rate of 0.6 pounds per hour per leaking door. Again, one-third of this rate or 0.2 pounds per hour per leaking topside point is estimated to be the lower bound.

Data for the fourth quarter of 1977 submitted by U.S. Steel Corp., Fairless Works, for Battery No. 1 and Battery No. 2, and Bethlehem Steel Corporation, Bethlehem Works for Battery A, all of which have double mains, indicates the following levels of percent of topside leaks for charging ports and offtakes.

Table 2.2

Company/Battery No.	Average Performance (% leaks)	
	Charging Ports	Offtake Piping
Bethlehem Steel Corp.--A	0.2	14.1
U.S. Steel Corp.--#1	7.6	16.3
U.S. Steel Corp.--#2	8.3	20.5
Average	5.4	17.0

Assuming the data presented in Table 2.2 to be representative of the example battery, the number of actual charging port leaks and offtake piping leaks would respectively be:

$$60 \text{ ovens} \times \frac{4 \text{ charging ports}}{\text{oven}} \times .054 (\% \text{ leaking}) = 13 \text{ charging port leaks, and} \quad (2.6)$$

$$60 \text{ ovens} \times \frac{2 \text{ offtakes}}{\text{oven}} \times .17 (\% \text{ leaking}) = 20 \text{ offtakes leaking.} \quad (2.7)$$

Therefore, with 33 points of the topside leaking, topside emissions allowable under the former requirements are estimated to be:

$$33 \text{ topside leaks} \times \frac{0.6 \text{ pounds}}{\text{hour-leak}} = 20 \text{ pounds/hour (upper limit)} \quad , \text{ and} \quad (2.8)$$

$$33 \text{ topside leaks} \times \frac{0.2 \text{ pounds}}{\text{hour-leak}} = 7 \text{ pounds/hour (lower limit).} \quad (2.9)$$

#### B.2.a.5 Summary

Allowable particulate matter emissions under the former requirements are summarized in Table 2.3 below:

Table 2.3

<u>Type of Emissions</u>	<u>Emission Rate (pounds/hour)</u>
Charging	3.4
Pushing	7.9 - 13.7
Doors	55.2
Topside	<u>7 - 20</u>
Total	73.5 - 92.3



## References to Section B.2

1. Trenholm, A. R. Standard Support and Environmental Impact Statement; For Potential New Source Performance Standards for By-Product Coke Oven Charging, U.S. Environmental Protection Agency, Draft, Chapter IV (August, 1976).
2. Trenholm, A. R. Standards Support and Environmental Impact Statement: An Investigation of the Best Systems of Emission Reduction for the Charging Operation and Topside Leaks on By-Product Coke Ovens, U.S. Environmental Protection Agency, Draft, p. 3-25 (July 1975).
3. Compilation of Air Pollutant Emission Factors, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, N.C., Publication AP-42, Second Edition with Supplements 1-5, p. 7.2-2 (February 1976).
4. Technical Guidance for Control of Industrial Process Fugitive Particulate Emission, Prepared by PEDCo Environmental, Inc., Cincinnati, Ohio, for U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, N.C.. EPA-450/3-77-010, p. 2-55 (March 1977).
5. Draft Report On Emission Testing and Evaluation of Ford/Koppers Smokeless Coke Pushing System, prepared by Clayton Environmental Consultants, Inc. for the U.S. Environmental Protection Agency, Contract No. 68-02-0630, Volume 1, Table 8.0-1 (May 5, 1976).

B.3. Comparison of Calculations of Allowed Particulate Emission Rate From a Coke Battery Under The Former Pennsylvania Coke Oven Requirements and Under The New Pennsylvania Coke Oven Regulations

Allowed particulate matter emissions for the example battery under the former requirements (current EPA requirements) and under the Department's new regulations (proposed SIP revision) are set forth in tabular form below. The fundamental conclusion to be drawn from Table 3.1 is that the new regulations are approximately three times more restrictive, on a mass emission basis, than former requirements.

Table 3.1\*

Type of Emissions	Emission Rate (pounds/hour)	
	New Regulations	Old Requirements
Charging	7.1	3.4
Pushing	10.7 - 11.4	7.9 - 13.7
Doors	4.6 - 8.4	55.2
Topside	2.0 - 6.0	7 - 20
TOTAL	24.4 - 32.9	73.5 - 92.3
(MID-RANGE)	(29)	(83)

The Department submits that EPA approval of the proposed SIP revision will clearly result in more stringent control of fugitive emissions from coke oven batteries than was the case under former requirements. In addition, the Department believes that the new regulations will prove more enforceable than former requirements based on the considerations discussed in Part C, infra.

\* From Table 1.2, section B.1.a.5. and Table 2.3, section B.2.a.5.

C. THE NEW REGULATIONS ARE MORE EASILY ADMINISTERED AND MORE ENFORCEABLE THAN FORMER REQUIREMENTS

It is axiomatic that the success and effectiveness of any set of regulations depends upon the degree to which compliance can be monitored and violations enforced in legal proceedings. In addition to providing a more restrictive degree of control of the fugitive emissions from coke ovens, the Department believes that the new regulations as written will prove easier to both monitor and enforce operator compliance than was the case under the old requirements.

C.1 The New Regulations Are Consistent With The Approach Taken By EPA in Establishing BACT Standards

The Department believes that one obvious strongpoint of its new regulations is the close similarity of both the emission standards and monitoring techniques contained therein<sup>1</sup> with the standards and techniques established by EPA as BACT for coke ovens. This similarity did not occur by chance. Throughout the Department's deliberations on its proposed new coke oven regulations, members of the Department were in close touch with EPA personnel as to the standards EPA was establishing as BACT and the Department made efforts to style its regulations accordingly.

As noted previously, the new regulations require the application of BACT for pushing, doors, and topside emissions. The Department's charging standard is less stringent than the EPA BACT charging standards.<sup>2</sup> However, the EPA approach of defining allowable emission levels in terms of any observed visible emissions, as opposed to establishing an allowable opacity standard, is reflected in each

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1. See 25 Pa. Code §§123.44(a), (b); 129.15; 123.13.

2. BACT for charging emissions is "forty-eight (48) to fifty-five (55) seconds of total visible emissions per five (5) consecutive charges." (EPA Memo from Stanley W. Legro, "Guidance on Levels of Controls for New By-Product Coke Batteries Locating in Areas Exceeding the NAAQS", January 5, 1977 at page 3). The Department's open charging standard (§123.44(a)(1)(i)) would allow visible emissions totaling seventy-five (75) seconds from four consecutive charges.



of the Department's standards for doors, charging, and topside emissions. Such an approach avoids difficulties previously encountered under the former requirements when percent opacity was used to determine compliance.<sup>3</sup> Moreover, the new regulations can be more easily monitored by Department staff since trained opacity observers are not required to determine compliance with most of the standards.<sup>4</sup>

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3. For example, enforcement of the new regulations is not as subject to the vagaries of weather conditions as were the former requirements, where inclement weather conditions oftentimes made opacity observations difficult. Under the former requirements, the physical location of some coke oven batteries was such that strict positional adherence to recommended observation procedures proved impractical. Counsel for Alan Wood argued during litigation before the Environmental Hearing Board that such positional deviation was grounds for invalidating Department observations. While the Board rejected this argument, it did indicate that it had considerable reservation as to the accuracy of the Department's observation and recording technique (reading every 15 seconds) as it applied to coke oven fugitive emissions based on the recognized short-term variability of these emissions. The Board further ruled that the Department's practice of not recording emissions unless determined to be 30% opacity or greater sufficiently took into account a recognized percent reading error of  $\pm 7 \frac{1}{2}\%$  and rejected Alan Wood's challenge on this point.

In addition to problems associated with assuring the accuracy of the technique, the Department experienced difficulties in documenting violations. Since the three-minute standard was allocated to all emission points on the battery, documentation of a violation—except in cases where gross emissions from one point (e.g., charging) would exceed the standard by itself—required several observers, each of whom would be responsible for observing a particular emission point during the one hour period. In the case of doors, two observers would separately be required to observe coke and pusher sides. Moreover, if any observer's view was obstructed (e.g., emissions from door areas blowing across the battery top and interfering with observation of charging emissions) the entire observation period would have to be commenced again, assuming emissions from other points on the battery did not aggregate more than 20% opacity for more than three minutes of any hour or greater than 60% at any given time.

4. Opacity requirements are contained in §123.44(a) (2) (40% limit on door leaks 15 minutes or longer after last charge to the oven); 129.15(c) (limiting visible fugitive emissions in excess of 20% opacity from any air cleaning device); 129.15(e) (limiting visible fugitive emissions during the transport of hot coke to 10% opacity). Waste heat stack emissions are still subject to the requirements of §123.41.

Under the former requirements, the Department was monitoring compliance/non-compliance by a coke plant operator through periodic inspections of the facility. Such periodic inspections made documentation of daily operating practices for enforcement purposes more difficult. Rather than a documented continuum of daily violations, the Department usually had discrete days of observed violation and was forced to present evidence illustrating repetitive, non-varying operation of the source to circumstantially establish continuous operational violations. The other course was to assign inspectors to observe plant operations on a regular basis, which necessarily placed a strain on Department manpower requirements. The new regulations, in contrast, require self-monitoring by all affected sources and periodic reporting of such monitoring to the Department.

Section 139.61<sup>5</sup> requires all coke plant operators to perform daily observations of visible air contaminants from points on the coke oven battery re-

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5.      §139.61. Requirements.

(a) Persons responsible for the operation of any source included in any class of sources listed in the first column of Table I of this Chapter shall do the following:

(1) Conduct source tests, air sampling, and analyses or perform visual observations of the air contaminants specified by name or by reference to an applicable emission standard in the second column of Table I.

(2) Conduct the required tests, sampling, analyses, or observations at the frequency required by the third column of Table I.

(3) Submit monitoring reports in accordance with the requirements of §139.53 of this Title (relating to filing monitoring reports) at the frequency specified in the fourth column of Table I.

(b) Table I follows:



ferenced in Sections 123.44(a) (1) (3) (4) (5) (6) (7)<sup>6</sup> as well as to conduct annual compliance tests on the pushing control device and waste heat stacks. Results of all daily monitoring observations, together with a summary of all daily readings must be submitted to the Department on a quarterly basis. Pursuant to Section 139.53 (a) (2),<sup>7</sup> all reports must be "sworn by the person exercising managerial responsibility over the operation of the source for which monitoring is required."

(continued)

5.

TABLE I

Class of Sources	Air Contaminants to be Monitored	Frequency of Testing Sampling or Observations	Frequency of Filing Moni- toring Reports
Coke oven batteries	§123.44(a) (1), (3), (4), (5), (6) & (7)	Daily during daylight	Quarterly
Pushing	§123.13(b)	Annual	Annual
Waste heat stack	§123.13(c)	Annual	Annual

6. The Department does not require companies to monitor compliance with the 40% door standard in §123.44(a) (2).

7. Section 139.53(a) (2) provides:

(a) Persons responsible for the operation of sources subject to monitoring requirements established by order, by condition of plan approval or permit, or pursuant to this Subchapter, shall submit periodic reports of the results of any tests, samples, or observations conducted, obtained, or made in accordance with the methods or techniques referenced in §139.52 of this Title (relating to monitoring methods and techniques). Such reports shall be:

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(2) sworn by the person exercising managerial responsibility over the operation of the source for which monitoring is required;



From an enforcement standpoint, the desirability of having daily monitoring records prepared by the source operator which may be used in civil litigation to document non-compliance status is obvious. In addition, the Department believes that requiring daily monitoring by source operators is an important measure to ensure continuous and effective emission control. Except for pushing emissions, emission control on coke oven batteries is largely a product of careful work practices, consistently maintained. It is the Department's experience that consistent worker performance requires periodic management review. By requiring the managerial supervisor to sign the monitoring reports, the Department will ensure that battery performance is being reviewed by responsible management. Again, experience indicates that if management review of battery performance is not focussed by regulatory requirement, management attention will be directed to this area only when legal action is initiated.

C.3 The New Regulations Provide Specific Standards to Which The Court May Refer in Framing The Relief To Be Granted.

The former requirements also presented serious problems in evaluating the question of the proper relief to be afforded once non-compliance was established. Since all emissions from points on the battery were subject to the three minute standard, the Department was faced with the necessity of evaluating control proposals for particular emission points on an interrelated basis in light of the anticipated effectiveness of control at other emission points. Given this interrelationship, protracted litigation over possible combinations of control proposals is invited.

For example, even assuming that the Department were to demonstrate that a proposed control plan which provided for no controls on charging emissions was inadequate to meet the standard, the source would presumably be free to submit another control plan which proposed no control of pushing emissions on the grounds

that, with charging emissions controlled, total visible emissions exceeding 20% opacity would not exceed three minutes per hour. Resolution of the acceptability of such control plans necessarily requires a judgment on the part of the Department as to the probable future effectiveness of proposed control measures to reduce aggregate visible emissions greater than 20% opacity to less than three minutes in any hour. When litigation ensues over a disagreement as to the acceptability of a control plan, the Department is not in the position of defending the ultimate standards, but rather of defending its judgment as to the probabilities of compliance being attained by the particular control proposal. In such a situation, as the Alan Wood litigation demonstrated, the trier of fact may delay requiring installation of positive control equipment to permit limited "field-testing" of a particular control proposal which attempts to attain compliance through implementation of an improved operation and maintenance program.

In the case of Alan Wood Steel, the air pollution abatement plan submitted to the Department pursuant to the requirements of Paragraph 6 of the Consent Agreement (attached as Appendix A-iii, supra) contained provisions for the control of charging emissions (staged charging), oven doors (rebricking, rebuilding and packing) and pushing. Alan Wood did not propose the installation of specific pushing control technology but rather proposed to reduce emissions from its pushing operations through the use of an operational technique which it described as the "Clean Push Program".<sup>8</sup> Because the Department did not believe that com-

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8. Alan Wood proposed to control visible emissions from pushing operations by use of the following operational techniques designed to identify incompletely coked ovens prior to the push:

"1. All ovens shall be coked for the full operating cycle of 16-1/2 hours charge to charge. Ovens will be dropped from the schedule during upsets to avoid a decrease in coking time.



pliance with the three minute opacity standard could be achieved unless pushing emissions were effectively contained, and because the Department anticipated progressive increases in emissions from the pushing operation as the battery aged and deteriorated unless positive pushing controls were installed, Alan Wood's abatement plan was denied.

The difficulty which faced the Department during litigation of Alan Wood's appeal of the denial to the Environmental Hearing Board was that of demonstrating to the examiner that it was more probable than not that Alan Wood's "Clean Push Program" would not reduce visible emissions from pushing to a level which, when residual emissions from other points (i.e., charging after installation of staged charging, doors after implementation of a door maintenance program) were considered, would assure compliance with the three minute standard. As Alan Wood's "Clean Push Program" involved an operating technique never before implemented, demonstrating this was difficult. The Environmental Hearing Board's review of the problem is worth noting:

This case presents one primary issue: Was the Department of Environmental Resources acting reasonably in denying approval of Alan Wood's proposed Clean Push Program, as it was framed initially or as it was amended during the hearing?

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(continued)

8.           "2. Oven heating controls will be maintained in good operating condition and flue temperatures will be monitored frequently.
- "3. The present patching and maintenance program will be continued. Records will be kept of repairs.
- "4. Goosenecks will be kept clean to allow free passage of gases from the oven to the collecting main.
- "5. Door refractories will be maintained in first class condition to avoid this cause of 'green ends'."

Where incomplete coking was indicated, Alan Wood proposed to remove the oven from the regular pushing sequence to allow further coking time.



The basic standard of paragraph 5 of the order calls for emissions over 20% opacity to be not more than 3 minutes in any hour. Within the context of this case, several different modes of uncompliance may be identified: (1) Pushing emissions over 20% by themselves might exceed 3 minutes; (2) Pushing emissions over 20% by themselves might be less than 3 minutes, but total emissions over 20% might exceed 3 minutes because of emissions from other sources (each of which was also less than 3 minutes)<sup>6</sup>; (3) Pushing emissions over 20% might be less than 3 minutes, but the total would exceed 3 minutes even if pushing emissions were zero, because emissions over 20% from one or more other sources exceed 3 minutes.

Since we are dealing with predicting the future, which no one can know with certainty, we cannot deal with certainties, but must deal with probabilities, and we must frame the issues in those terms. We might decide that the department was unreasonable if the probability of compliance with the standard is high enough with Alan Wood's proposed Clean Push Program that it would be unreasonable at this time to insist on the slightly greater probability of compliance that might result from some other program.

But the probability of compliance must be treated separately for each of the cases analyzed above. If we could say that the probability was very high that pushing emissions over 20% would by themselves exceed 3 minutes, then we would have no problem holding that the department was reasonable in denying approval of Alan Wood's pushing proposal. And the hearing and litigation process would not have taken so long.

But things are never that simple. The evidence showed that case (3) represents the current situation--pushing emissions over 20% do not now exceed 3 minutes, but door emissions over 20% would cause total emissions over 20% to exceed 3 minutes even if pushing emissions and charging emissions were zero. Neither party believed this would be the ultimate situation. The department felt that the probable situation would be case (2)--other emissions over 20% would not exceed 3 minutes, but would be great enough that pushing emissions would have to be kept as close to zero as possible<sup>9</sup> in order to keep total emissions over 20% under 3 minutes.

6. For example, door emissions might be 1 1/2 minutes, charging emissions 1 1/2 minutes, and pushing emissions 1 minute, for a total of 4 minutes.

9. Alan Wood Steel Co. v. Commonwealth of Pennsylvania, Department of Environmental Resources, EHB #73-368-B "Proposed Adjudication of Hearing Examiner" pages 13-14. The final adjudication of the Board, which adopted the examiner's adjudication with modification of the final order is attached as Appendix C-i.

The final Environmental Hearing Board adjudication expressed a considerable degree of doubt that Alan Wood's "Clean Push Program" would meet the three minute standard in the 1972 Consent Agreement. However, in view of the capital expense and energy requirements of a positive control system, the Board did not feel that the improbability that compliance with the standard could be attained without pushing controls had been sufficiently demonstrated by the Department to convince the Board to require Alan Wood to abandon the program and immediately proceed with positive pushing controls. As a result, the Board's Order provided for an additional 120 days testing period, to commence after installation and operation of a new larry car and coke side door plugs, for evaluation of Alan Wood's entire coke oven emission control program. Thus, after almost four years of litigation, the issue of appropriate compliance with the order standard remained unresolved and its ultimate resolution was left to an unspecified future date.<sup>10</sup>

Under the new regulations compliance standards are specified for particular emission points which are independent from each other. Pursuant to §§127.41, 127.42 a specified time in which compliance must be achieved is established by regulation. Thus the difficulties encountered in the Alan Wood litigation would be obviated by the new regulations.

#### C.4 Conclusion

In light of the above discussion, it is apparent that the new regulations represent significant improvements over the former requirements in terms of administration and enforcement of compliance. In a memo from Jerome Ostrov,

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10. The Board's adjudication recognized that the recent financial difficulties experienced by Alan Wood might further delay installation of equipment and thus delay implementation of the testing program.

Deputy Associate General Counsel (Air, Noise, and Radiation Division) to Richard G. Rhoads, Director, Control Programs Development Division,<sup>11</sup> OGC advised that where a proposed partial SIP revision imposed emission limitations which were more enforceable than the regulations then applicable to the class of sources AND the new standards would become effective coincidentally with the withdrawal of the then applicable regulation, EPA approval was appropriate. The Department believes that the instant situation presents somewhat similar considerations to those addressed in the Ostrov memo. Therefore, the ease of enforcement provides an additional basis upon which EPA may rely in approving the Department's new, more stringent coke oven regulations as a revision to the federally-approved SIP.

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11. A copy of the Ostrov memo is attached as Appendix C-ii..



